

CAVALRY



FM 17-95

This copy is a reprint which includes current pages from Changes 1 and 2.

CHANGE
No. 2

FM 17-95
C2

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 20 April 1981

CAVALRY

Effective upon receipt. This change updates FM 17-95, 1 July 1977. Changed material is indicated by a colored bar in the margin or star (★) preceding the material.

Make the following page changes.

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File this change sheet in front of the publication for reference purposes.

C2, FM 17-95

20 APRIL 1981

By Order of the Secretary of the Army:

E. C. MEYER
General, United States Army
Chief of Staff

Official:

J. C. PENNINGTON
Major General, United States Army
The Adjutant General

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CHANGE
No. 1

FM 17-95
C1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 7 January 1980

CAVALRY

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7 JANUARY 1980

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CAVALRY

PREFACE

Cavalry is a combat maneuver force of combined arms mounted in ground and/or aerial vehicles. It is uniquely organized, equipped, and trained to find the enemy in order to prevent the friendly main body from being engaged under adverse circumstances and to provide, within its capability, security for the main body.

Cavalry organization and use exemplify two essential criteria of battle. The first is the need to find the enemy and develop the situation with the least force possible. The second is the need to provide reaction time and maneuver space with a force tailored to leave the largest possible residual of combat power in the main body available for use at the time and place of decision. These criteria are based on a principle of war—*economy of force*. Cavalry is an economy force.

Cavalry's basic tasks are reconnaissance and security. Cavalry accomplishes these tasks through combined arms action at all levels from the scout team through the regiment.

In order to see the battlefield and the enemy, cavalry must move continually and rapidly. Cavalry **moves to see** and **moves to fight**. When fighting outnumbered, it is necessary for any force of combined arms to move to mass sufficient force to accomplish its mission. This is more so with cavalry than with other forces, since *one of cavalry's prime tasks is to find the enemy and fight him*.

In order to **move to see** the enemy and **move to fight** the enemy, it is necessary for cavalry to suppress those enemy weapons which can hinder accomplishment of the cavalry mission. Field and air defense artillery, attack helicopters, and USAF tactical fighter-bombers must be organized and employed to provide sufficient suppression to enable cavalry to move.

In order to accomplish its mission, cavalry must frequently destroy sufficient enemy forces to convince the enemy to break off an attack, to give up a defensive area, or to move toward or away from an area vital to friendly forces. Therefore, more often than not, cavalry will have to fight to accomplish its mission.

To **move, see, suppress, and destroy** requires the ultimate in command control. Cavalry is equipped with a wide variety of extremely capable communications equipment which enables the cavalry commander to command and control his units over wide distances. This communication equipment is vulnerable to enemy electronic countermeasures, and Threat forces are well equipped and trained to take such countermeasures. Therefore, tight discipline and imaginative alternatives must be used by the cavalry commander to ensure he has positive control at all times.

The main body commander will always require real-time information of the enemy and of the status of operations in the cavalry unit. Of course, it is not possible to provide real-time information. However, the closer the cavalry unit can come to providing real-time coverage of the battlefield and the enemy, the more it will satisfy the most demanding of its tasks.

Finally, cavalry operations must be **supported** with combat support, especially the fuel, ammunition, and maintenance support necessary to keep the cavalry unit seeing, moving, suppressing, and destroying. Careful organization and aggressive operation of support activities are essential to sustained cavalry operations. This is especially true of logistics support operations.

This manual describes how cavalry fights to accomplish its basic battle tasks of reconnaissance and security. Cavalry organizations are integral parts of larger combined arms formations. How those larger combined arms formations and their subordinate elements fight is set forth in the 71 series field manuals. This manual describes how armored cavalry platoons, troops, squadrons, and regiments fight, and how air cavalry platoons, troops, and squadrons fight, regardless of their parent unit.

Remember that all Army units are organized under modified tables of organization and equipment (MTOE). Therefore, to know the manpower and equipment authorizations for a specific unit, it is necessary to consult the authorization document (MTOE) for that unit. Because organization and equipment varies by time and place, this manual discusses these factors in general terms only, relying on the reader to understand his own equipment and organization well enough to apply the principles in this manual.

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The US Army Armor School (USAARMS) is the proponent for this publication. Recommended changes and comments for its improvement are solicited. Prepare comments and recommended changes on DA Form 2028 and forward to Commandant, US Army Armor School, ATTN: ATSB-TD, Fort Knox, KY 40121.

To comply with guidance of the Assistant Secretary of Defense (Manpower and Reserve Affairs), this Field Manual has been reviewed for the use of neutral language. Unless otherwise noted, where the third person singular is used in this publication, the word "he" will be understood to stand for both masculine and feminine genders.

THE MODERN BATTLEFIELD: AN OVERVIEW

In past wars the US Army held a commanding position on the battlefield. We were able to field large forces with powerful weapons and often control the airspace. However, the world's weapons and armies have changed greatly in the last 20 years, and these changes seriously affect the US Army's ability to control the modern battlefield.

- One of the most important changes is the use of greatly improved weapons. Modern armies use long range, high-velocity tank cannon and antiarmor missile systems that dominate the battlefield. These weapons have tremendous ranges and are highly lethal; if the enemy can see you and you're within range, he can hit and kill you.
- Artillery and other indirect-fire weapons are also greatly improved over those of World War II. Their great range, wide casualty radius, and fire control measures let the enemy mass great amounts of fire on its opponents.
- Modern long range air defense cannon and missile systems are so powerful that they can dominate the air above the battlefield. Unless suppressed, these weapons limit close air support for frontline fighting units. Such enemy weapons force air cavalry and attack helicopter units to operate close to the ground—in the same battle environment as frontline fighting units.
- In future battles the US Army will be greatly outnumbered, especially overseas in the first battles of a war. To succeed, cavalry may have to destroy the enemy at a rate of five to one. Since future wars will probably be shorter than in the past, the US must win the first battles—and win them while outnumbered.

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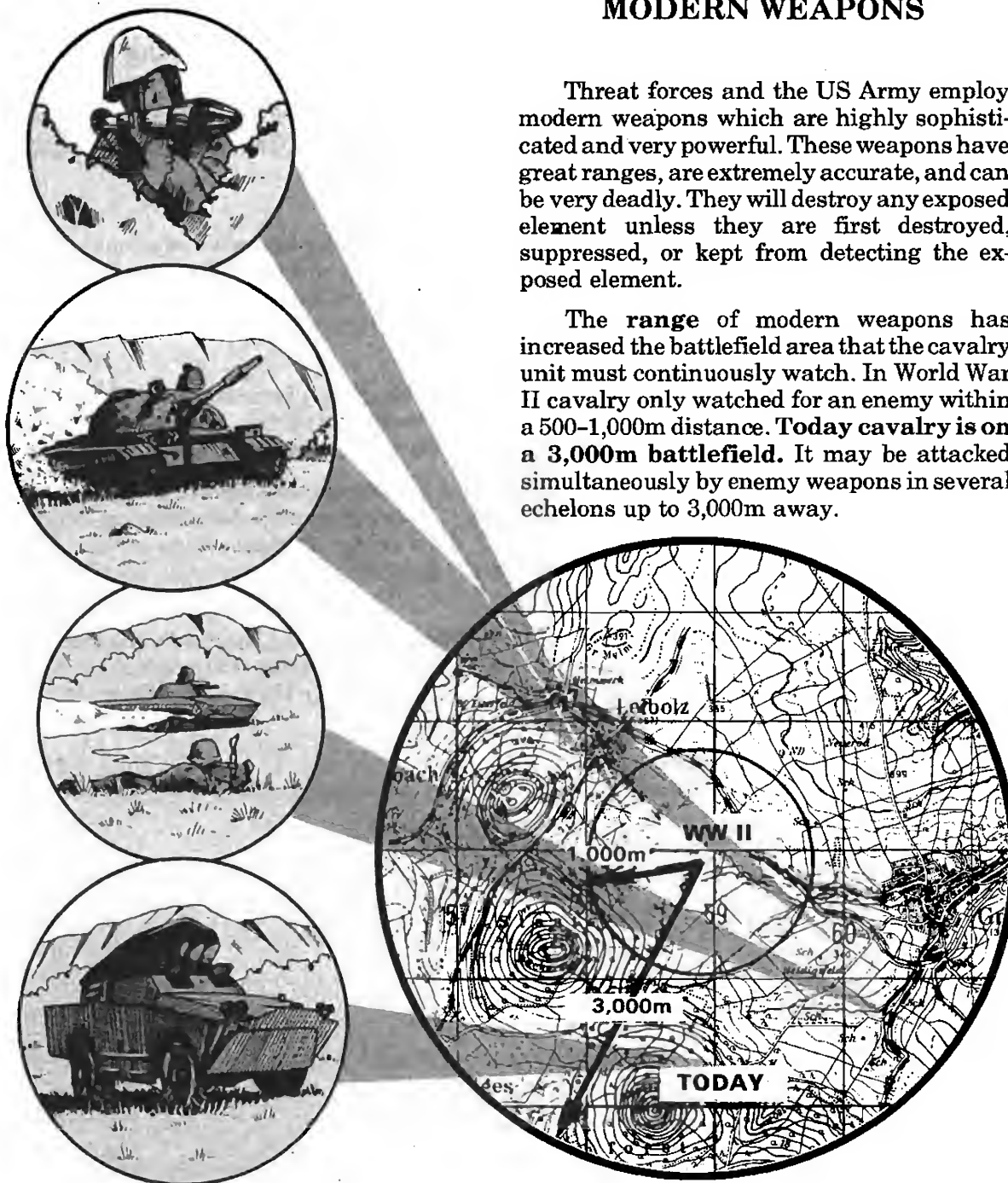
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Because of these changes, the US Army will find battles harder to win in the future. To overcome the enemy, we must train hard against these improved weapons and greater odds. **By thorough training and by understanding enemy weapons and tactics, the US Army will win the first battles—and future wars.**

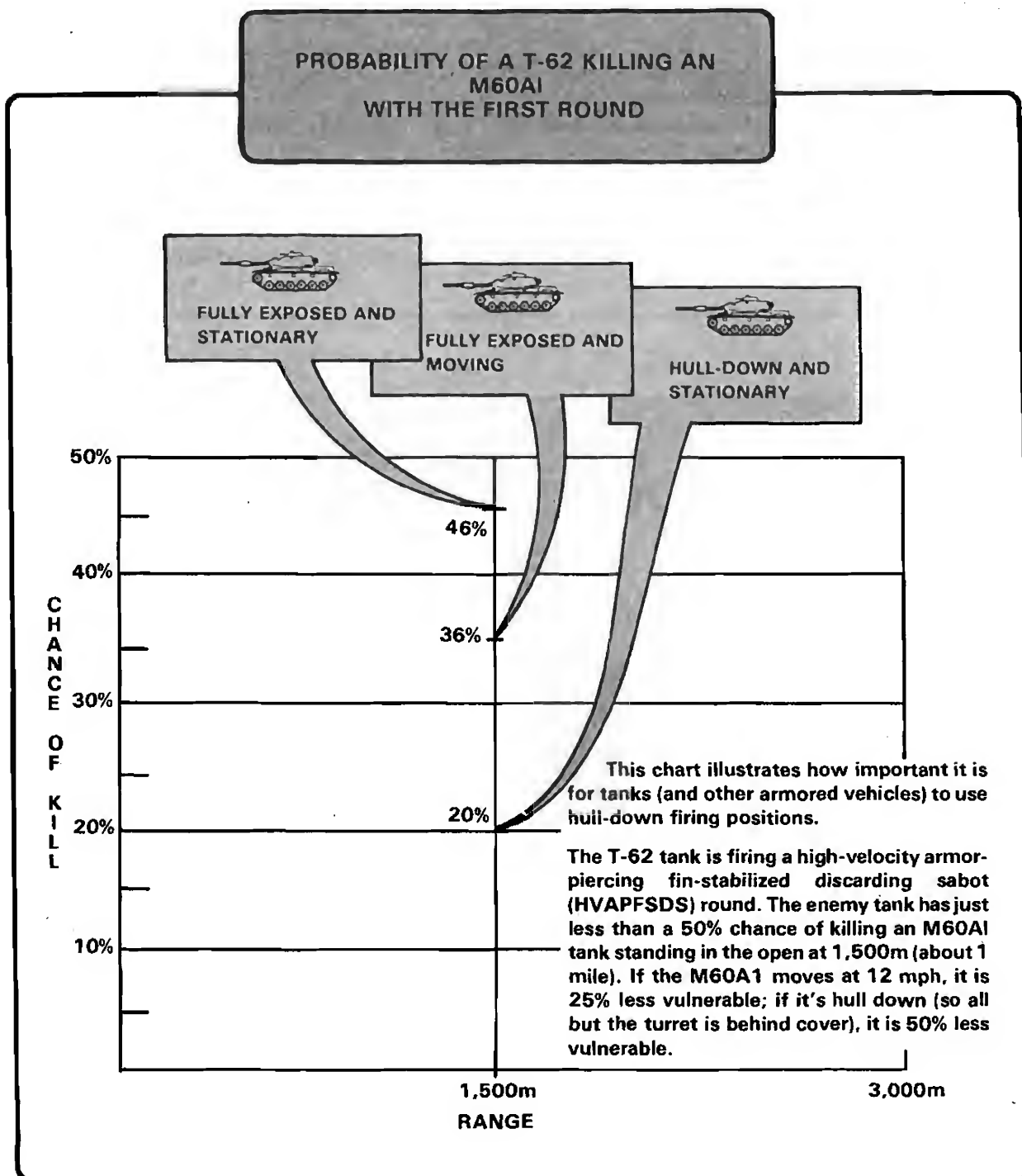
MODERN WEAPONS

Threat forces and the US Army employ modern weapons which are highly sophisticated and very powerful. These weapons have great ranges, are extremely accurate, and can be very deadly. They will destroy any exposed element unless they are first destroyed, suppressed, or kept from detecting the exposed element.

The **range** of modern weapons has increased the battlefield area that the cavalry unit must continuously watch. In World War II cavalry only watched for an enemy within a 500-1,000m distance. **Today cavalry is on a 3,000m battlefield.** It may be attacked simultaneously by enemy weapons in several echelons up to 3,000m away.



The accuracy of modern weapons is very great; tank guns are so accurate that they will usually get first-round hits. Their ammunition destroys both hard and soft targets.

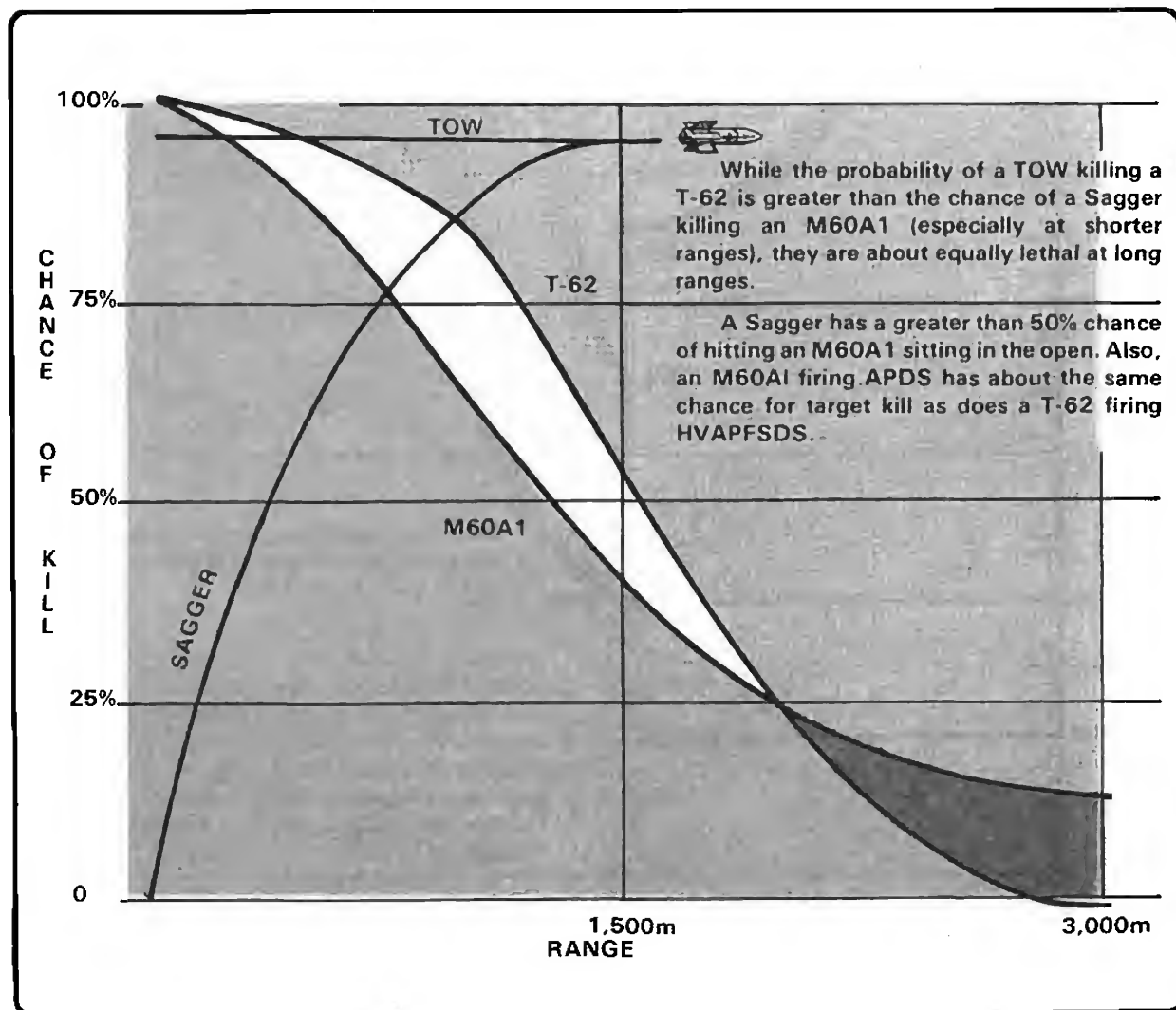


Modern ammunition is extremely **lethal**, being ten times more deadly than that of World War II. If this ammo hits its target, the chances for target destruction are very high—up to 95%. If you're hit, there's little chance for escape.

The enemy's weapons work well together; for instance the range, accuracy, and lethality of modern antitank guided missiles and tanks complement one another. These guided missiles are very accurate and destructive at medium to long ranges, while Threat tanks provide a great deal of accurate fire at medium to short ranges.

Don't make the mistake of thinking that US weapons are more sophisticated than Threat ones. Remember, the capabilities of US Army and enemy weapons are nearly equal. While one side may gain a temporary advantage from new weapon developments, the other side quickly offsets that advantage with similar improvements.

For example, the chart below shows the chances for target kill by the US M60A1 and the Threat T-62—their chances are about the same. The US Army must therefore gain any significant advantages by skillful tactics, sound training, and good leadership.



The lethality, accuracy, and range of weapons on the modern battlefield do not prevent successful operations. However, their presence means commanders must **minimize** their troops' vulnerability to enemy weapons while **maximizing** the capabilities of their own weapons.

To minimize vulnerability to enemy weapons:

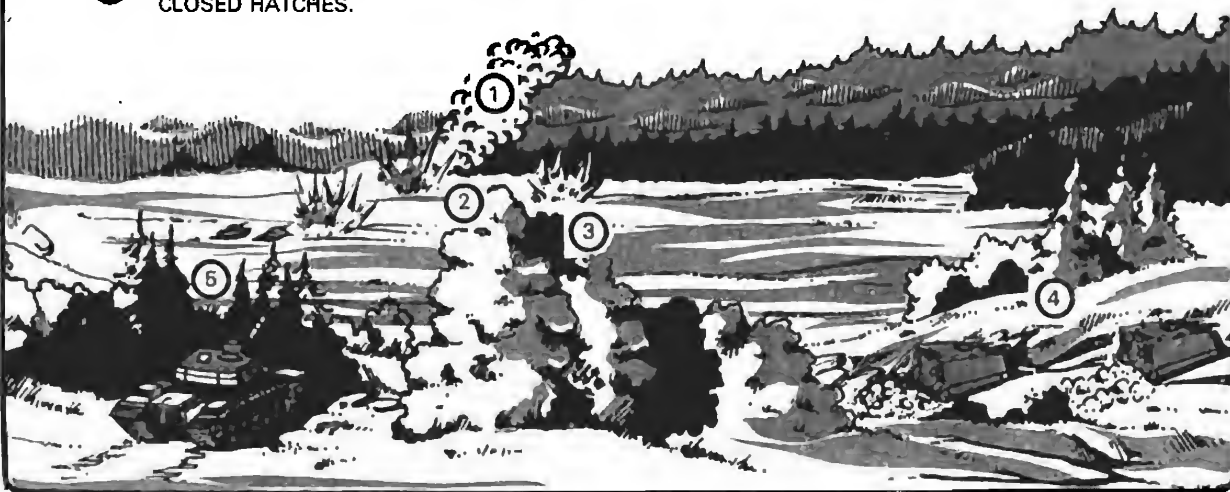
- **Avoid exposure**—don't let the enemy see you.

- **Suppress the enemy**—don't let him fire at you or at other friendly units.
- **Fire first**—destroy the enemy before he can hit you.

To avoid exposure to the enemy, **use the terrain to your advantage**. While moving or stationary, make the greatest use of all available cover and concealment. Travel on covered and concealed routes from one covered and concealed position to the next. Remember: use the terrain so the enemy can't see and shoot you.

OVERWATCH AND SUPPRESS

- ① PLACE SMOKE ON LIKELY ENEMY LOCATIONS.
- ② USE FIELD ARTILLERY AND MORTARS TO SUPPRESS KNOWN ENEMY LOCATIONS.
- ③ FORCE THE ENEMY TO FIGHT WITH CLOSED HATCHES.
- ④ USE FIRE FROM INFANTRY CARRIERS TO SUPPRESS ANTIARMOR WEAPONS.
- ⑤ USE LIGHT ARMORED VEHICLES AND TANKS TO KILL TANKS AND OTHER ARMORED VEHICLES.

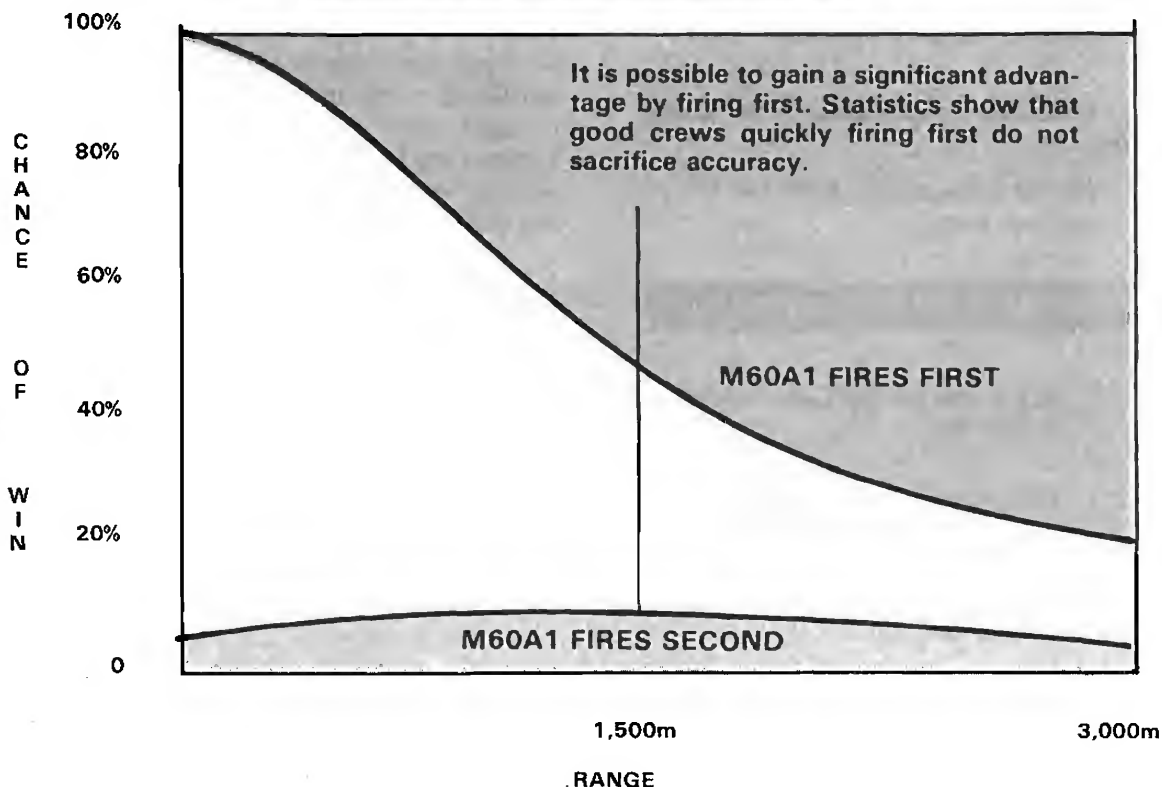


If you must travel exposed on the battlefield, **obscure your presence** with smoke, darkness, bad weather, electronic counter-countermeasures, or any combination of these and other methods. Hide your presence from the enemy.

No matter how carefully a unit uses the terrain, there will probably be places where

some elements must move while exposed. So, whenever a unit travels, **overwatch its moving elements** with another element placed to **suppress enemy fire**. If the enemy fires on an exposed element, the overwatch element destroys or suppresses the enemy while the exposed element moves to the nearest covered and concealed position.

**CHANCE OF WIN IN A 60-SECOND
DUEL BETWEEN
AN M60A1 AND A T-62
(T-62 fully exposed)**



To suppress the enemy, **use direct and indirect fire on known enemy locations.** If you suspect the enemy might be hidden in a certain location, use high explosive (HE) or white phosphorus (WP) ammo on that place to blind him. Smoke or HE ammo can remove enemy weapons from the battle, thus minimizing the unit's vulnerability and turning the odds in its favor.

For example, if two US tanks oppose six Threat tanks and US forces can suppress five of the Threat tanks, then the advantage becomes 2:1 in favor of the US.

When you spot the enemy, you can gain an important advantage by **FIRING FIRST!** This is especially true when you are exposed. A well-trained tank crew should fire the first round *within 5 seconds after target acquisition*. In doing so, the crew greatly increases its chances of winning.

For example, in a 60-second duel between two stationary tanks, the well-trained crew that fires first accurately multiplies its chance of winning two to nine times (depending on range). This tactic *minimizes* the tank's vulnerability while *maximizing* its weapons' capabilities.

To extend the advantage gained by firing first, the cavalry commander must control and distribute tank and antitank fires to kill targets quickly but save enough ammo to engage the next echelon. Tank crews should also stow plenty of ammo and fuel so they can reduce the frequency of resupply. The cavalry commander, however, should ensure that his resupply systems are quick, responsive, and secure.

MOBILITY

Modern armies are almost completely mechanized. Tanks, infantry combat vehicles, and helicopters give a mobility past armies never had. This mobility lets the commander:

- *Change the odds in his favor* so that his unit has a better chance of winning.
- *Seize the initiative from the enemy*, thus increasing the unit's chance of winning.

For example, in an *attack* the commander must concentrate enough force in one area to defeat the enemy there. He does this by rapidly moving cavalry units to get superior odds, conducting a hasty attack, and exploiting the outcome of that attack.

Through mobility the commander masses his forces in *defense* against an

enemy main attack. If he is outnumbered 10:1, he maneuvers so he is outnumbered only 3:1 or 4:1. He changes the odds so he can break the enemy onslaught by destroying masses of enemy tanks and vehicles attacking at that point.

- ★ Mobility of air cavalry allows teams to remain out of enemy artillery concentrations while aerial scouts identify gaps and maneuver in and around these concentrations in order to begin early engagements.

Cavalry's most difficult task is to *see the battlefield* and the enemy well enough to enable the cavalry unit itself or the main body to concentrate. Seeing the battlefield adequately depends in part on the use of special equipment, but most of all on the "mental mobility" of cavalry commanders, their command control capability, and the reaction of their well-trained cavalymen.

Mobility offers other advantages besides concentration. Threat forces use massive amounts of artillery; they fire extremely heavy preparations before attacking. If hit by this artillery, a cavalry unit could suffer serious losses. However, mobility lets cavalry minimize the effects of enemy artillery fire. Cavalry should:

- *Move after shooting* to avoid enemy artillery fire.
- *Move out from under heavy artillery fire when it falls on team positions* to an alternate position.

NIGHT FIGHTING

Modern armies can fight at night by using sophisticated sighting and sensing equipment. A new range of tactical possibilities is opened by new tank sights, night vision goggles, antitank guided missile (ATGM) sights, and thermal imagery devices. Even with these devices, most weapons are still somewhat less effective at night than in day. However, cavalry must take advantage of its night-fighting equipment; it must be ready to fight at night as in the day.

Threat forces are skilled in night fighting. They use the poor visibility of darkness to continue pressing the attack. To do this, they try to:

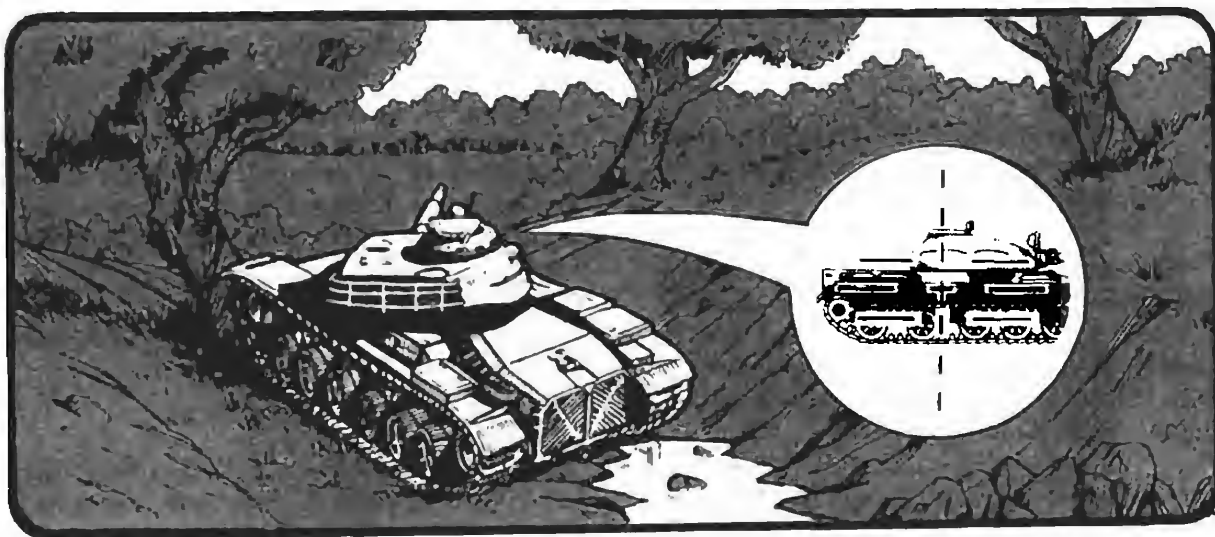
- Achieve surprise.
- Bypass or breach defensive positions and obstacles.
- Destroy and disrupt command, control, and support systems.

So, to defend against Threat forces, cavalry must make maximum use of night-fighting equipment, especially the passive night viewing devices. If it does, it can keep the tactical advantages that the defender normally has.

Night vision equipment lets the cavalry unit fire and maneuver at night almost as in daylight. The unit can thus attack at night with more freedom of movement and fewer restrictive control measures than in the past. However, night offensive operations still need more preparation and carefully designed control measures than are, in most cases, required in daytime. These include:

- *Careful preparation during daylight hours to reduce confusion.*
- *Carefully planned primary and alternate means of communication to ensure command and control.*
- *Carefully planned and coordinated suppressive fires.*
- *Concentration of forces at the chosen place and time.*

The force which can operate at night as it does in the day by fully using cover, concealment, suppressive fires, and night vision equipment can easily defeat the force that does not. Cavalry, then, must fight at night as in the day.



The fighting capability of air cavalry units is somewhat limited during periods of darkness. Helicopter crews increase their navigation and target acquisition capability by using night vision devices. However, illumination, such as artillery or mortar, must be used to engage targets with antitank guided missiles (ATGM's).

The *advantages* of night terrain flight are:

- Engagement by the enemy's conventional weaponry and missile systems which utilize visual detection is more difficult.
- Threat ground observers cannot determine the direction from which a helicopter is approaching until it is at close range.
- Detection of a helicopter by enemy tactical air is more difficult.

The *disadvantages* of night terrain flight are:

- Navigation is difficult due to the limited ranges at which terrain features can be identified.
- Margin of flight safety is reduced.
- Meteorological conditions may significantly restrict nap-of-the-earth (NOE) flight.
- Pilots may suffer vertigo due to lack of visual references.
- Target acquisition and range determination are more difficult at night.

For a complete discussion of night terrain flight and its limitations, see FM 1-51, Rotary Wing Flight.

Although the aeroscout will adhere to the same tactics at night as in the day, the aeroscout should take into account:

NIGHT VISION

The aeroscout must make every effort to conserve his night vision. He should be aware of human eye limitations and night adaptation techniques and must maintain light discipline at all times. Exterior aircraft lighting should not be used except in emergency situations (TC 1-31). Interior lighting should be set at the minimum necessary to safely accomplish the mission. While airborne, the flight route should avoid direct overflight of illuminated areas. Aircrews must be alert to tactical light sources (flares, searchlights) that may be encountered and be prepared to apply protective measures against loss of night vision. When aeroweapons aircraft are expending ordnance, do not watch; rather, position your aircraft where the weapon flashes will not cause distraction. If a flash of high intensity light is expected from a specific direction, crewmembers may turn the aircraft to minimize exposure to the light source. When such a condition occurs unexpectedly and direct view cannot be avoided, dark adaptation can be preserved by covering or shutting one eye while using the other to observe. Once the light source is no longer a factor, the eye which was covered will provide the night vision capability required to conduct the flight. When flares are used in a night tactical operation or are inadvertently detonated above your position, fly the aircraft as close as feasible to the periphery of the illuminated area.

MISSION PLANNING

Daylight reconnaissance. The scout crew (pilot and observer) and the aero-weapons/attack helicopter crew (pilot and copilot/gunner) must perform a daylight reconnaissance of the areas in which night missions will be flown to obtain information on terrain conditions, landmarks and obstructions to flight. The importance of prior daylight reconnaissance of the area of operations to air cavalry units cannot be overstressed. Crews familiar with the operational area will function much more effectively than those who view the area of operations for the first time at night through night optics. By noticing differences in terrain from daylight to dark, aeroscouts can detect the enemy faster. Air cavalry units should have thoroughly rehearsed their contingency mission to include routes to and from the area of operations.

Map and intelligence update. Current, accurate maps and intelligence, both friendly and enemy, will be critical to night missions. The problem of limited depth perception experienced with current night vision equipment, the reliance placed on instruments, and the low altitude environment crews and teams will be operating in will require up-to-date map intelligence. Recent intelligence on the disposition of friendly and enemy units will be necessary to ensure high priority potential enemy locations are reconnoitered and intelligence confirmed. Knowledge of friendly unit disposition will be necessary to ensure friendly units are not mistaken for enemy units.

Size of operational unit areas. Night operations are slower paced due to the increased problem of command and control and the limitations of night mission optics.

Therefore, the scope and the area of operations are reduced.

While areas of responsibility will not be reduced during night operations, actual reconnaissance zones will have to be reduced. Night reconnaissance will be restricted to those areas of most probable enemy activity. The gaps between these areas will be covered by surveillance devices; that is, manual (radar) or unattended sensors.

Control measures and coordination with friendly units. Control measures for night operations will be more restrictive than those used during day operations. Coordination of routes to and from the area of operation, passage points, the use of phase lines, boundaries, contact points, coordination points, recognition signals, FARP locations, unit dispositions, and emergency procedures are planned in detail for night operations. Close coordination with friendly units, to include artillery and air defense elements, is necessary.

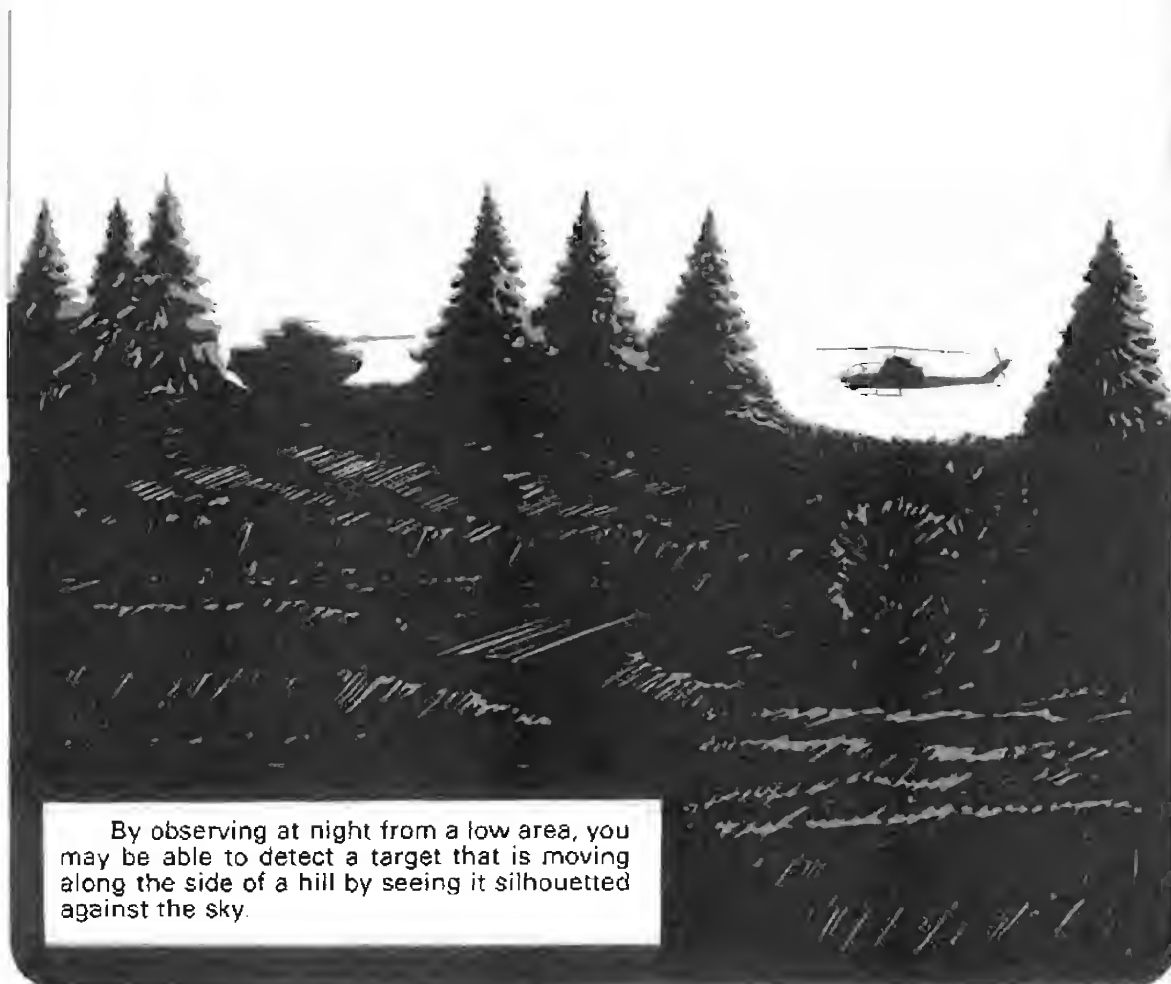
The unit must train to fight at night as in the day—that is, make full use of cover, concealment, and suppressive fires to defeat the force that does not. Night training must include daylight maneuvers and emergency procedures. Night flight training, coordinated with ambient light intensity levels of moon phases and other hemispherical illumination, provides an opportunity to develop low-level night operating capabilities.

Night training must be approached in three distinct and progressive phases based on a high degree of daylight skills. In the first phase, aircrews must be brought to a level of confidence and proficiency in conventional night operations. The second phase involves exposure to the night terrain flight environment. In both phases, the aircrewmen must be able to accomplish their

missions without the assistance of night vision aids. The third phase should serve to introduce effective night operations using night vision aids that can greatly enhance aviation capabilities. Proficiency in night

flight is realized only through intensive and repetitious practice. *It is the commander's responsibility to bring his unit to this peak and thus increase both the unit's staying power and combat capability.*

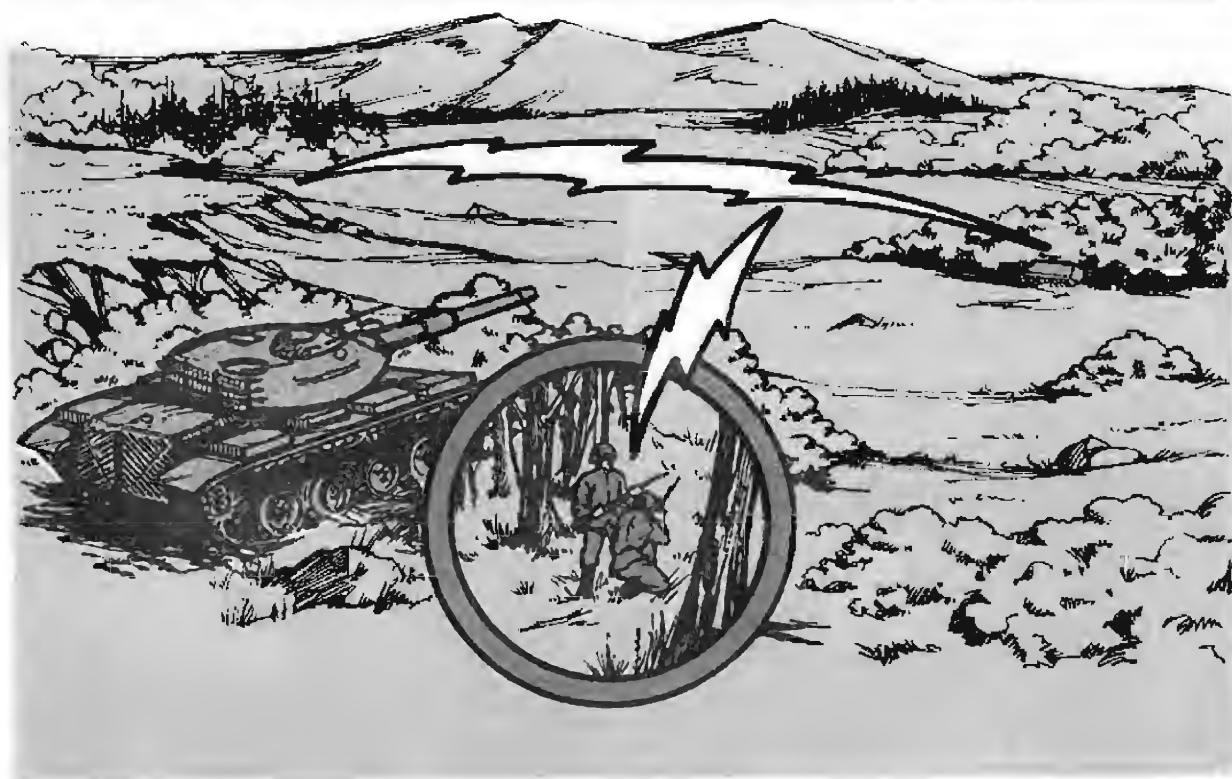
STAY OFF THE SKYLINE, EVEN AT NIGHT



AIR POWER

Threat forces can control at least part of the air over the battlefield and may place our forward elements under intense air attack. Therefore the cavalry commander must include in his battle plans a scheme for countering Threat air forces, including tactical fighter bombers and attack helicopters. Cavalry must use both active and passive measures—that is, effective fires and concealment.





COMMAND CONTROL

Reliable, flexible, and responsive command control systems are essential to successfully employing cavalry. These systems provide:

- *Control of highly mobile, fast-moving cavalry maneuver elements.*
- *Direction and coordination of fires of many weapons, sited at different ranges and locations and firing in support of cavalry operations.*

The enemy has a significant electronic warfare (EW) capability. He can block radio transmissions during critical periods in the fight. He can listen to transmissions to gain information and can give false instructions through imitative transmissions. Also, he can locate US Army positions with direction-finding (DF) equipment. Despite these enemy

efforts to interfere, the commander must command and control his unit throughout the battle. To do this, unit members must effectively counter enemy EW efforts against command and control systems by:

- *Using prearranged signals and visual means whenever possible.*
- *Using radio **only when necessary** and then transmitting as quickly as possible.*
- *Planning an alternate means of control in case primary means are suppressed.*

Some confusion in battle will certainly occur. However, if the commander has sure control and issues clear, concise orders, confusion and misunderstanding can be minimized.

NUCLEAR, BIOLOGICAL, AND CHEMICAL OPERATIONS



With the advance of nuclear technology, many armies will soon be able to use nuclear weapons. It is the policy of the United States not to employ nuclear weapons unless the enemy uses them first, or unless conventional defenses become inadequate. However, the US Army must be ready to fight and win when nuclear weapons are used.

While the destructive power of nuclear weapons makes the battlefield an even more dangerous place than it might be without them, remember that:

- *Nuclear weapon effects must be exploited by ground forces.*
- *Nuclear weapon effects are greatly minimized by mistakes in target locating and weapon delivery. Armored units can move rapidly, preventing the enemy from locating them accurately enough to make an effective nuclear strike.*
- *Aarmor protection and mobility are the best possible defense against nuclear weapons; cavalry has both. Cavalry units are usually not good nuclear targets because of the dispersed nature of most cavalry operations.*

The United States has renounced the use of biological agents and will not use chemical weapons first. However, other armies have these weapons and are prepared to use them. These weapons could severely reduce mobility and the ability to concentrate force—unless US soldiers understand the effects of such weapons and know how to fight in a chemical and biological environment. The force that can live in this environment and still move, use terrain and overwatch, suppress, and concentrate superior force, will defeat the side that cannot.

SUMMARY

The characteristics of today's battlefield are a formidable challenge to cavalry. The cavalry commander and his soldiers must understand the dynamics of modern battle. To win, they must:

- *Find and identify the enemy at the greatest possible distances from the friendly main body.* This prevents early engagement of an unwarned, poorly deployed main force.
- *Fire first in a tank battle,* especially at antiarmor targets. Accuracy is important in a tank duel, but firing *accurately and first* is most important. Statistically, the team that fires first wins four out of five battles.
- *Move only along covered and concealed routes, skillfully using terrain to avoid enemy long range observation and fire.*
- *Suppress with direct and indirect fires.* This lessens the chance that the enemy can see and attack maneuvering forces.
- *Operate during limited visibility or in darkness.* This reduces the range and accuracy of enemy observation and fire.
- *Maintain precision, discipline, speed, and security in directing and reporting the battle unaffected by enemy countermeasures.*

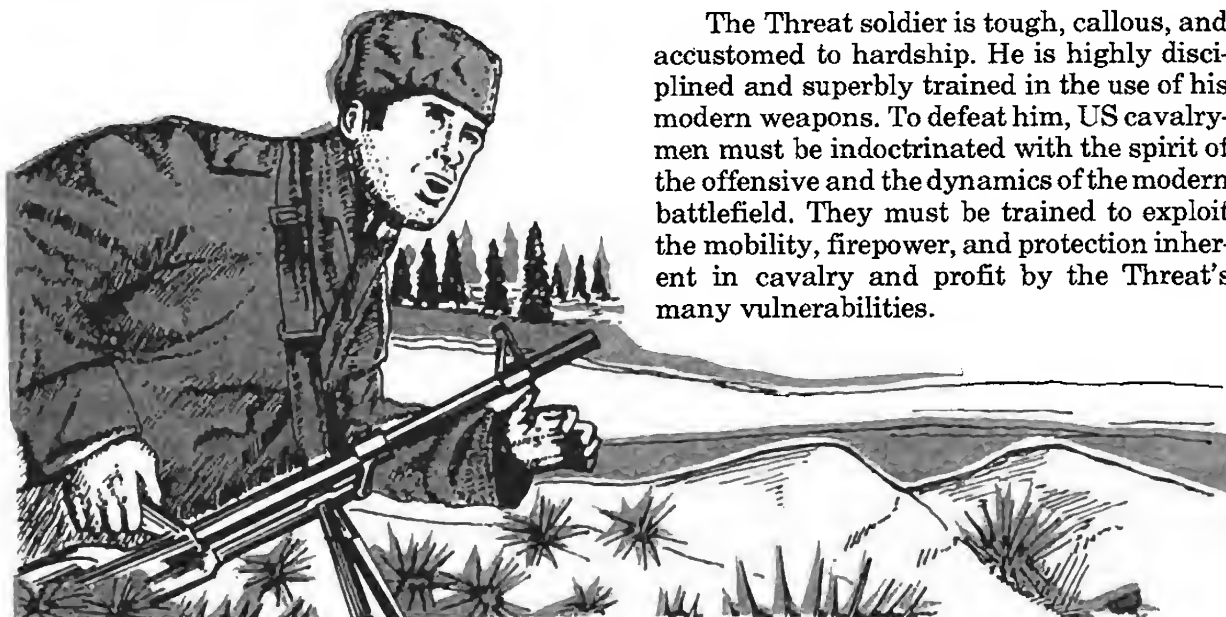
THE ENEMY IN MODERN BATTLE

The enemy – the “Threat” – is one of the largest, best equipped, and best trained armies in the world. It is heavy in tanks and artillery and is basically a mounted force. It has a family of weapons that complement each other in battle. Threat tactics stress massing men and weapons in depth to overpower the opposition. This chapter describes the Threat in sufficient detail that US cavalrymen can train to counter Threat strengths and take advantage of Threat weaknesses to win the first battle of the next war—outnumbered. In describing the Threat, this chapter discusses the individual soldier as well as each type weapon the US cavalryman is likely to face in great numbers. The discussion includes not only their strengths and weaknesses, but also suggestions for defeating each Threat weapon. These weapons are shown together in attack and defense settings to give a more complete picture of Threat capabilities.

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THE THREAT SOLDIER

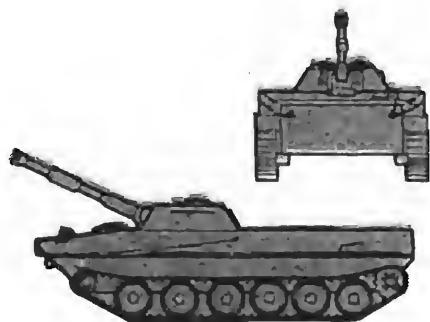


The Threat soldier is tough, callous, and accustomed to hardship. He is highly disciplined and superbly trained in the use of his modern weapons. To defeat him, US cavalrymen must be indoctrinated with the spirit of the offensive and the dynamics of the modern battlefield. They must be trained to exploit the mobility, firepower, and protection inherent in cavalry and profit by the Threat's many vulnerabilities.

THREAT WEAPONS

TACTICAL VEHICLES

Tanks. Threat main battle tanks are smaller than the US main battle tank. They have a cruising range of about 300 miles without auxiliary fuel and can attain speeds of about 30 mph. Threat tank fire control is relatively simple compared to that of US tanks. Currently, they mount no rangefinder similar to those on US tanks. Most Threat main battle tanks are equipped with active infrared (ir) night viewing devices, and have a superior underwater snorkeling capability.

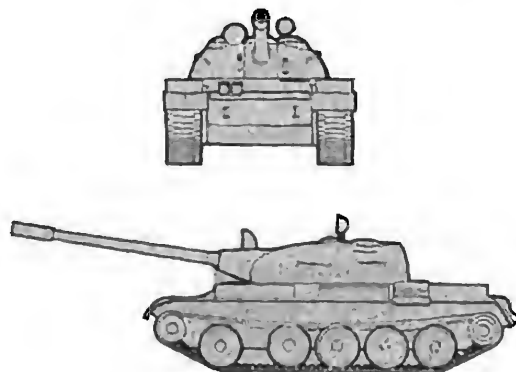


PT-76.

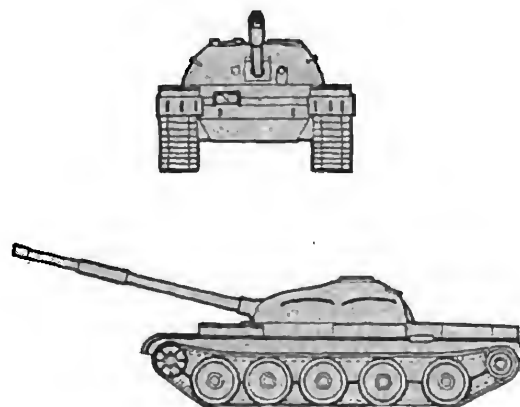
The PT-76 tank is a light-weight, amphibious reconnaissance vehicle with a 76-mm main gun and a 7.62-mm coaxial machinegun. Some vehicles may be fitted with a 12.7-mm machinegun for air defense. This tank is normally found in a reconnaissance role in front of the main Threat force.

T-55.

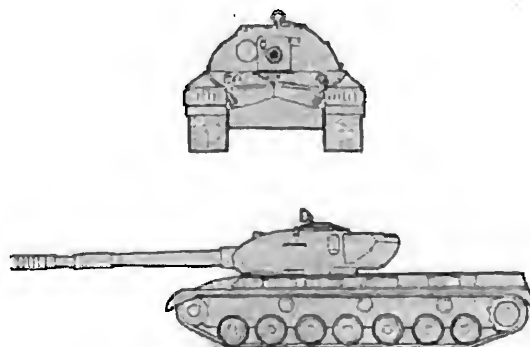
The T-55 tank was developed after World War II as the Threat main battle tank. The vehicle is armed with a 100-mm rifled bore main gun, a 7.62-mm coaxial machinegun, and on some older models, a 7.62-mm hull-mounted machinegun. It has standard infrared night sight and driving equipment and snorkel capability, and it is found in most combat units.

**T-62.**

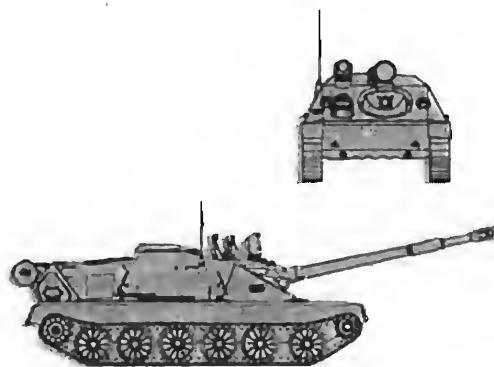
The T-62 is replacing the T-55 tank. The most significant feature of the tank is its 115-mm smoothbore gun. The T-62 tank has standard infrared night sight and driving equipment as well as a snorkel capability. Additional armament includes a 7.62-mm coaxial machinegun. The T-62A tank, which appeared in 1970, is identical in appearance to the earlier model except that the right side of the turret has been redesigned to allow the mounting of a 12.7-mm antiaircraft machinegun at the loader's position. *The maximum effective air defense range of the 12.7-mm is 1,000m.*

**T-10.**

The T-10 heavy tank is rarely seen in Threat forward areas. This tank stays in the rear and is used in counterattacks or with tank killer units. It is equipped with infrared sights or devices for all crew members, and has seven pairs of road wheels. Its primary weapon is a 122-mm stabilized gun firing kinetic energy armor-piercing cap and chemical energy high explosive antitank ammunition. It has two 12.7-mm machineguns, one for antiaircraft and another mounted coaxially with the main gun.

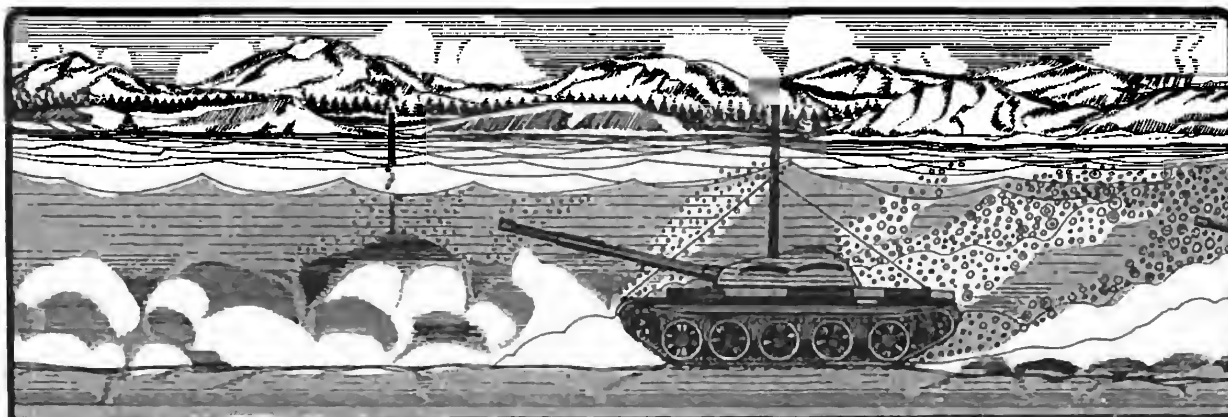


ASU-85. The ASU-85 airborne assault gun provides armored striking power to airborne forces. Although not amphibious, the ASU-85 chassis is based on that of the PT-76 tank. Its armament is an 85-mm main gun and a 7.62-mm coaxial machinegun. The ASU-85 mounts a large gunner's infrared searchlight above the mantlet and carries a small commander's light.

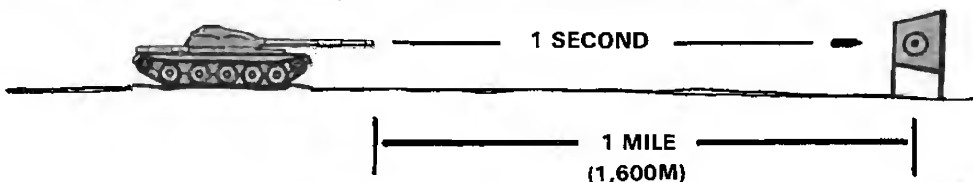


Strengths. The strengths of Threat main battle tanks are:

- *Low silhouette*, which makes them harder to hit.
 - *Simple fire control*, which makes them easier to operate and maintain.
 - *Infrared night vision devices*, which increase effectiveness at night.
 - *Underwater snorkeling*, which permits them to cross water barriers quickly.
- *The high-velocity 115-mm APFSDS tank-defeating round*, which travels a mile every second. The accuracy of this round gives T-62 tank crews a 50% chance of hitting a stationary target in the open with the first round at ranges to 1,500m, or a moving target traveling at a constant speed in the open at ranges to 1,000m.



THE HVAPFSDS IS THE FASTEST TANK CANNON ROUND IN THE WORLD.



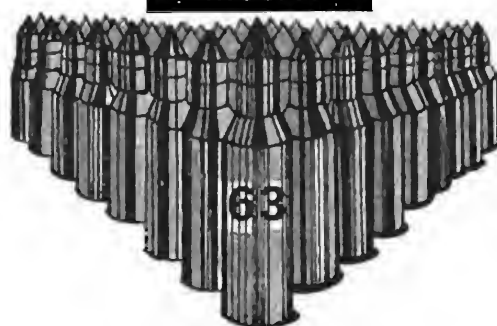
Weaknesses. The weaknesses of Threat main battle tanks are:

- Threat tank fighting compartments are considerably smaller than those in US tanks. The crew is cramped and freedom to move is restricted. Crew fatigue can therefore be a bigger factor in Threat tanks.
- Smaller turret interior and larger (115-mm) main gun ammunition means that Threat tanks have a slower rate of fire than US tanks.
- Because of its small fighting compartment, the T-62 tank has 23 fewer rounds of main gun ammunition than the M60A1. Therefore, in tank duels Threat tanks may run out of ammunition sooner than US tanks.
- Some main gun ammunition is strapped along the turret walls, and hits above the turret ring may cause secondary ammunition explosions.

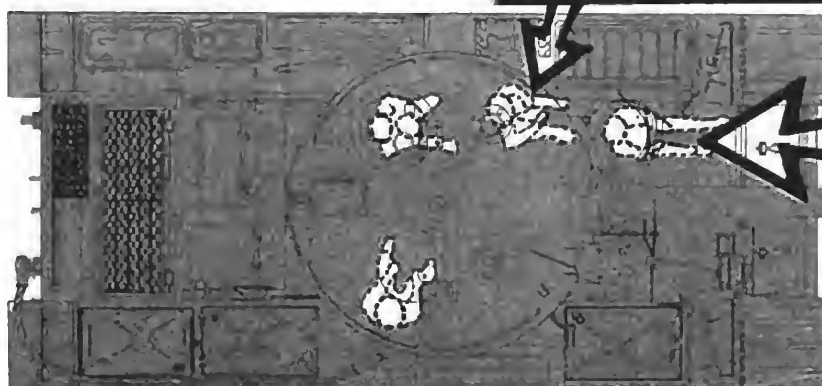
T-62



M60A1



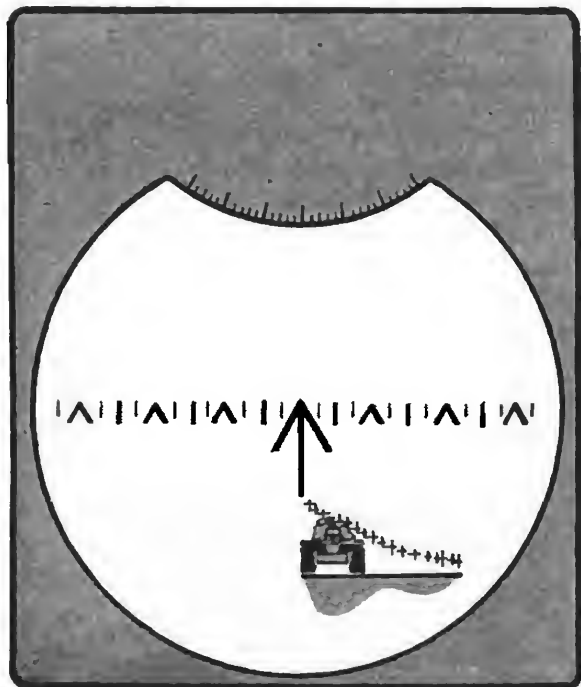
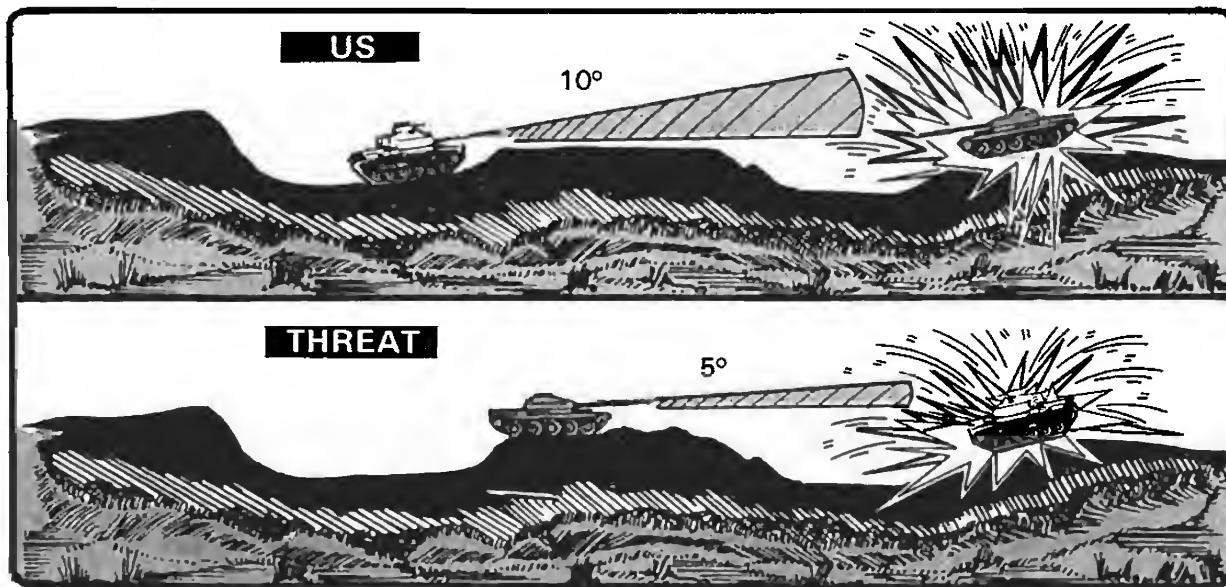
Positions increase Threat crew vulnerability. A penetration of the left front of the hull could hit the driver and gunner; a penetration of the left front of the turret could hit the gunner and TC.



T-62

- Because of their low silhouettes, Threat tanks can't depress their main guns as far as M60 tanks. This means that in certain situations Threat tanks must be exposed more than US tanks when firing their main gun.

- Since current Threat tanks are not equipped with rangefinders, their precision gunnery is less accurate than ours. Presently, the stadia reticle is the only optical aid the Threat tank gunner has to determine range.



To find the range, the gunner places the target within the stadia and base lines and reads the range where the tank touches the stadia line. The stadia line is based on the height (not width or length) of a fully exposed M60A1 tank.

If the US tank is not fully exposed, the gunner can't range accurately—another reason for US tankers to use hull-down positions.

- Threat tank turrets can't traverse nearly as fast as ours. This enables US tankers to engage flank targets sooner, and track moving targets better than Threat tankers.

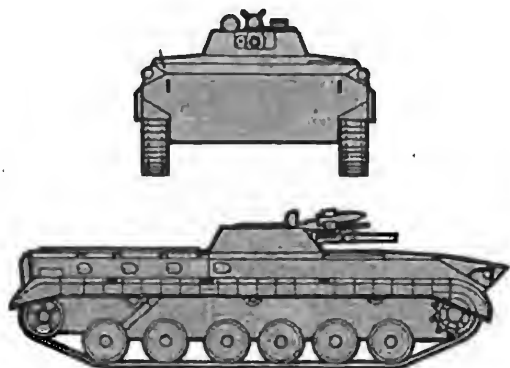
- Most Threat tanks stow a combination of ammunition and fuel in the right front of the hull. A round into this area will probably result in a catastrophic kill.
- Threat tanks also have external fuel tanks mounted flush with the top of the rear deck. If these have not been dropped, subjecting them to artillery or direct fire will cause them to burn.

Suggestions. To reduce the odds and minimize Threat weapon effectiveness:

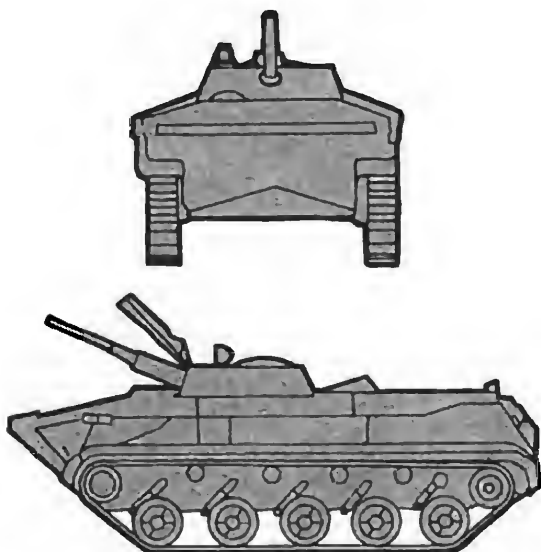
- Use terrain to best advantage while moving.
- Use hull-down firing positions.
- Avoid neat geometric formations.
- Move using overwatch.
- Suppress likely enemy positions using a variety of means: tank, light armor vehicle, artillery, mortar, and air fires.
- Obscure the target with tank white phosphorus (WP) or mortar/artillery smoke/WP.
- Conceal your positions using vehicle-mounted grenade launchers when available.
- Make abrupt speed and direction changes (zigzag).



Infantry Combat Vehicles.



BMP. The amphibious BMP is used as both a reconnaissance and an armored fighting vehicle. The armored infantry version of the BMP has a crew of three—gunner, driver, and vehicle commander and has a rear compartment troop capacity of eight. There are four periscopes and firing ports on each side allowing the infantry to fire from inside the vehicle while on the move. Its main armament is a 73-mm smoothbore gun with a Sagger missile rail mounted over the gun. A 7.62-mm PKT coaxial machinegun is mounted on the turret. Each BMP has racks for two Sagger missiles.



BMD. The airborne amphibious combat vehicle, BMD, resembles the BMP. It has five evenly spaced road wheels on each side and is 5m long. It is air droppable, carries six troops, and has a turret similar to the BMP with a 73-mm gun and a Sagger missile launch rail. The BMD is amphibious and has a water propulsion system similar to the PT-76.

Scout Vehicles.

BRDM-2. The BRDM-2 is a four-wheel-drive amphibious scout car adaptable for many uses on the battlefield. It can be used as a command vehicle, an NBC test vehicle, an antiarmor vehicle, or an ADA vehicle. Cross-country mobility is improved by a centralized tire pressure regulation system, and by four retractable auxiliary drive wheels located

under the center of the vehicle which can be lowered to aid flotation and help in crossing gaps. The rear mounted power plant is improved over that of the first BRDM's. Its armament is a turret-mounted 14.7-mm machinegun. Its armament in the basic reconnaissance car is two machineguns mounted on the turret.



BRDM-2

CHEMICAL RECONNAISSANCE
VEHICLE

COMMAND VEHICLE



ATGM LAUNCHER



RECONNAISSANCE CAR

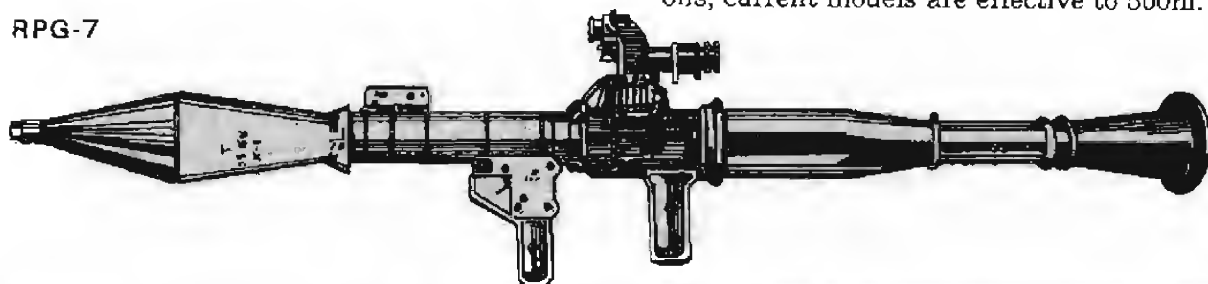
ANTIAIRCRAFT MISSILE
LAUNCHER

ANTITANK WEAPONS

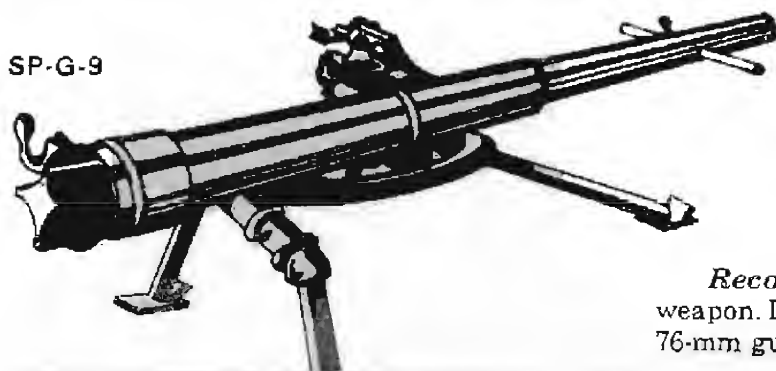
In addition to large numbers of armored vehicles, Threat forces can be expected to saturate the battlefield with rocket-propelled grenades (RPG's), recoilless guns, and antitank guided missiles (ATGM's).

Rocket-Propelled Grenades. RPG's are shoulder-fired infantry antitank weapons; current models are effective to 500m.

RPG-7



SP-G-9



Recoilless Gun. The SP-G-9 is a new weapon. It is a tripod-mounted, man-portable, 76-mm gun with a locked breech.



Antitank Guided Missiles. Threat forces have deployed two types of ATGM's in large numbers: the Sagger is wire-guided and thus invulnerable to electronic countermeasures (ECM), and the Swatter is radio-guided and vulnerable to ECM.

ATGM's are highly accurate to 3,000m. They are highly mobile and can defeat all known armor.

Missiles can be mounted on BMP's, BMD's, BRDM-2's, and helicopters.

"Suitcase" Sagger's can be man-packed and ground-mounted. In this version, the Sagger is easily carried by its crew. Its light weight and small size make it easy to transport, set up, and camouflage.

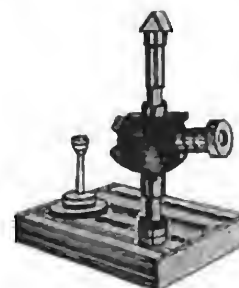
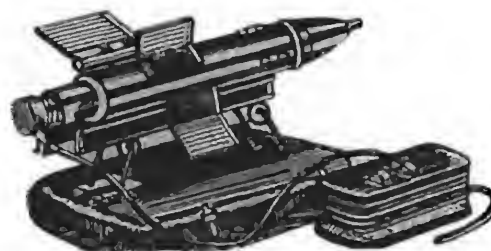
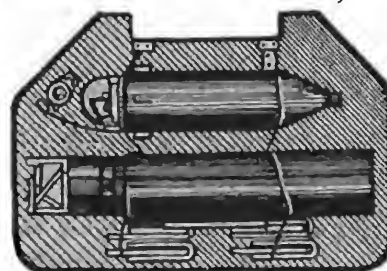
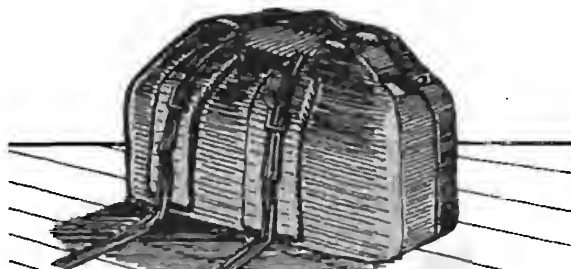
Strengths. The main strengths of Threat ATGM's are:

- *Long range accuracy and lethality*, which permits them to *hit and defeat* all known armor up to 3,000m away.
- *Versatility of employment*, which enables ATGM's to be fired while crewmen are buttoned-up and, in the case of the Sagger on a BRDM-2, at a remote position up to 80m from the vehicle. The "suitcase" Sagger may be remotely fired from a position up to 15m from the launching rail.

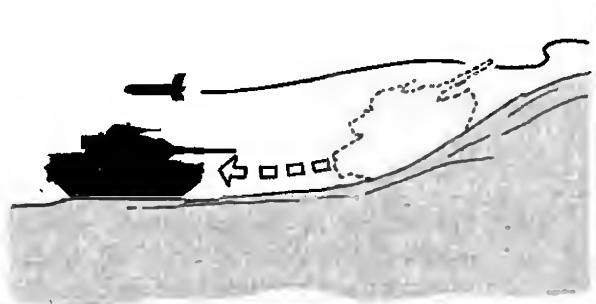
Weaknesses. In spite of their reliability, mobility, and long range effectiveness, Threat ATGM's have weaknesses.

- Gunners must have good visual contact with both target and missile during flight. Threat ATGM's are not effective at night. US cavalrymen who move behind cover, obscure themselves by smoke, or conceal themselves in vegetation reduce Threat missile and rocket hit probability. Bushes can break Sagger guidance wires causing loss of missile control. Trees or heavy brush can detonate an ATGM warhead.
- Gunners must be highly trained. Threat ATGM gunners must simultaneously track both target and missile with an optical viewer, while flying the missile with a "joystick" on a control box.
- Missiles have a minimum range limitation. The missile has to fly about 500m after launch for the gunner to capture it in his viewer and accurately fly it to target.

SAGGER



- Because the missile is highly sensitive to course corrections, a sudden, violent turn or erratic speed and direction changes by the target will cause gunners to overcorrect and lose control of the missile.
- Since Threat ATGM's are very slow (12.5 seconds to fly 1,500m; 25 seconds to fly 3,000m), there is ample time for the target to react if it observes the missile firing.
- The Swatter is susceptible to electronic countermeasures.



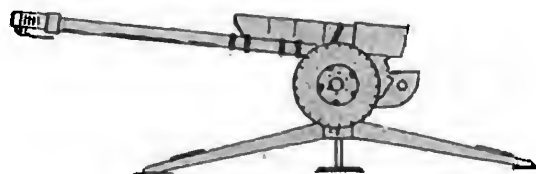
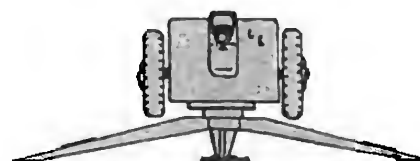
Suggestions. To defeat Threat ATGM's:

- Move, using terrain properly.
- Fire from hull-down positions.
- Avoid geometric formations.
- Use overwatch to move. When a Threat missile firing is observed, overwatch vehicles should fire quickly to kill or distract the ATGM gunner.
- Make abrupt speed and direction changes (zigzag) when moving.
- Use artillery and mortar suppressive fires to neutralize, distract or force the gunner inside a vehicle where his field of view is limited.
- When a Threat missile firing is observed, move immediately to cover. This includes simply backing down from a hull-down firing position to a turret-down position.

ARTILLERY

Threat forces are equipped with a variety of excellent artillery weapons, from light and heavy mortars and conventional field guns and howitzers to multiple rocket launchers (MRL's) and missiles—all capable of firing conventional, nuclear, biological, and chemical rounds. Large numbers of Threat artillery weapons with extended ranges can be used against US cavalry formations. MRL's can deliver saturation fire, while conventional artillery fires against targets of opportunity and preselected targets.

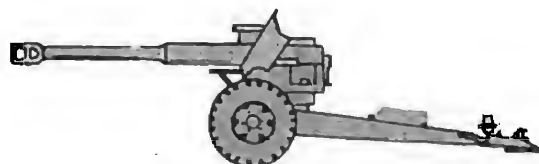
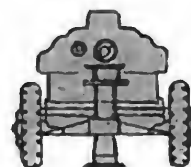
The most common field pieces are 122-mm and 152-mm *towed howitzers*. The maximum range of the 122-mm howitzer is 15,300m and its rate of fire is 7-8 rounds per minute.



122-MM HOWITZER D-30

The 152-mm howitzer's maximum range is 18,500m and its rate of fire is 5 rounds per minute. The range of the largest towed howitzer, the 203-mm, is 29,500m.

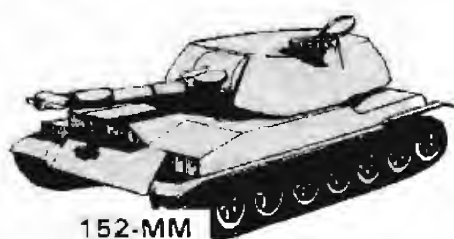
Threat forces use *towed field guns* of various calibers. The largest of these guns is 130-mm with a range of over 27,000m.



152-MM HOWITZER D-20

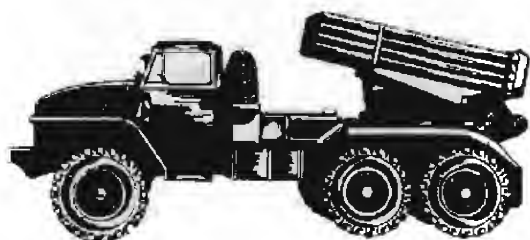
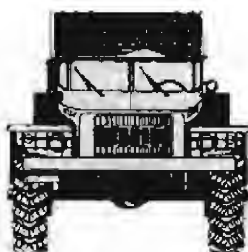


122-MM



152-MM

Threat forces have recently been equipped with two new mobile artillery pieces: 122-mm and 152-mm self-propelled (SP) guns. The 122-mm SP gun is mounted on a tracked carriage which resembles the hull of the BMP personnel carrier and running gear of the PT-76 tank. The gun is mounted in a turret with compartments and hatches for both gunner and commander. Not much is known about the 152-mm SP.



122-MM ROCKET LAUNCHER BM-21

Threat forces usually use the multiple rocket launcher (MRL) for area coverage. These weapons are available in many sizes, but the most common is the 122-mm truck-mounted launcher, which can fire up to 40 rounds simultaneously up to 20,000m.

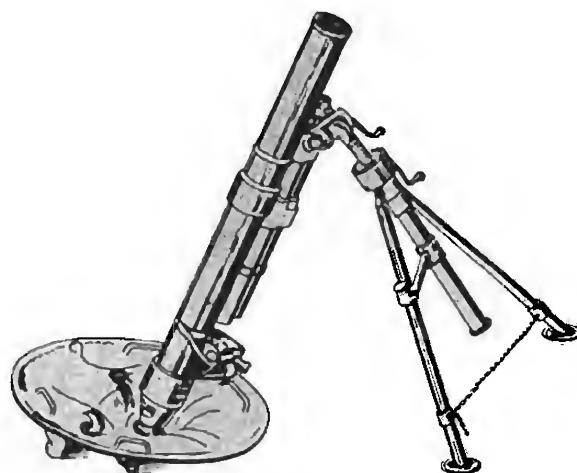
Threat mortars have the same basic support missions as US mortars. Threat mortars are almost the same as those found in US forces. One of the largest is the 120-mm mortar with a range of 5,700m.

Strengths. The main strengths of Threat artillery are:

- *Extended ranges.* Many types of weapons provide a capability for effective indirect fire support.
- *Variety of ammunition* to attack different types of targets. In addition to indirect fire, Threat artillery can be attached to frontline units to provide heavy firepower against terrain, bunkers, and strongpoints. Weapons most frequently used in this role are 122-mm and 152-mm howitzers and 122-mm multiple rocket launcher. All artillery pieces up to and including the 152-mm have special armor-piercing projectiles for direct-fire against tanks.

Weaknesses. Threat artillery has three major weaknesses:

- Unless preplanned, Threat artillery can't be massed or shifted as quickly and efficiently as US artillery.
- Mainly towed, Threat artillery has limited cross-country mobility, and requires more time to change firing positions.
- Lacking overhead cover, towed Threat artillery is vulnerable to indirect suppressive fire.



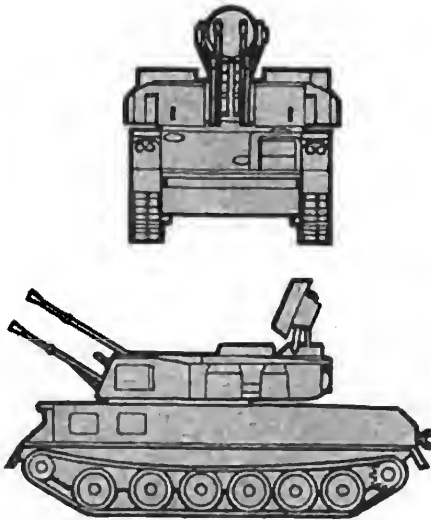
120-MM MORTAR

Suggestions. To defeat Threat artillery, remember:

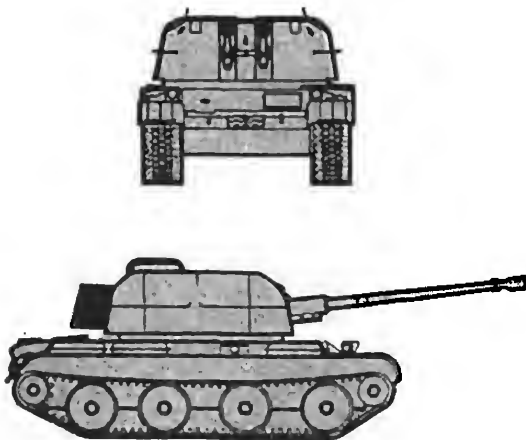
- To counter Threat artillery, button-up and use hull-down positions when stationary and covered and concealed routes when moving. Use suppressive fires on enemy guns and gunners.
- Threat artillery positions will normally be encountered immediately to the rear of hostile defensive positions. The destruction of artillery is important because the enemy will try to use both direct and indirect fire.
- Towed artillery is vulnerable to attack from the flanks or rear. When caught moving, it is at an extreme disadvantage.

ANTIAIRCRAFT ARTILLERY AND MISSILES

Antiaircraft Artillery. The Threat Army has been reluctant to replace its conventional antiaircraft guns with more sophisticated surface-to-air missile (SAM) systems. Antiaircraft artillery weapons range in caliber from 12.7-mm to 130-mm. Present emphasis is on automatic, rapid-fire, highly mobile guns and missile systems designed to provide field armies with effective low-level air defense.



ZSU-23-4. The ZSU-23-4 is a self-propelled system mounting four 23-mm guns with a completely integrated fire control system. The ZSU-23-4 is mounted on a light tracked chassis. Its onboard radar is used for both target acquisition and target tracking. Its two guns fire 800-1,000 rounds per minute each with a tactical antiaircraft range of 3,000m with radar and 2,000m without radar. It may be used against aircraft maneuvering to evade low- and medium-level surface-to-air missiles.

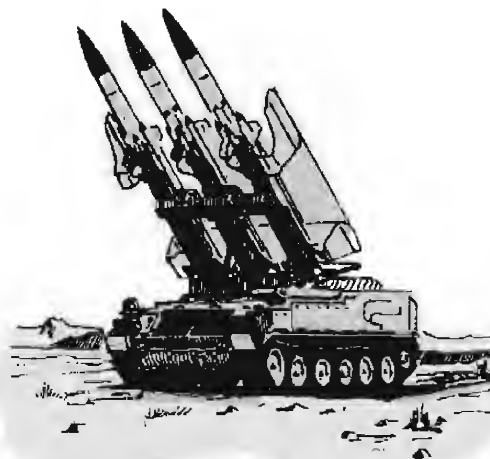


ZSU-57-2. The ZSU-57-2 is used by field air defense units in tank divisions. It consists of a modified T-54 tank chassis carrying a twin S-68 57-mm gun in a large, squarish, open top turret. The chassis has much less armor than the T-54 tank and the running gear uses only four roadwheels. It weighs 28.1 tons. The turret is also identifiable by the large basket on the rear where empty cartridge cases are stored. It can fire 105-120 rounds per minute per gun with a tactical antiaircraft range of 4,000m.

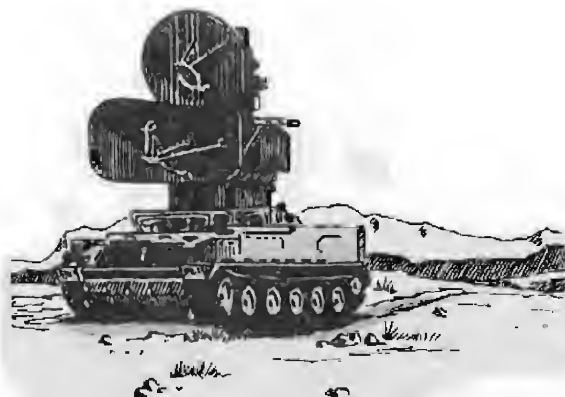
Antiaircraft Missiles. Threat forces have developed a family of semi-mobile and mobile, crew-served air defense missiles for the tactical air defense of field armies.

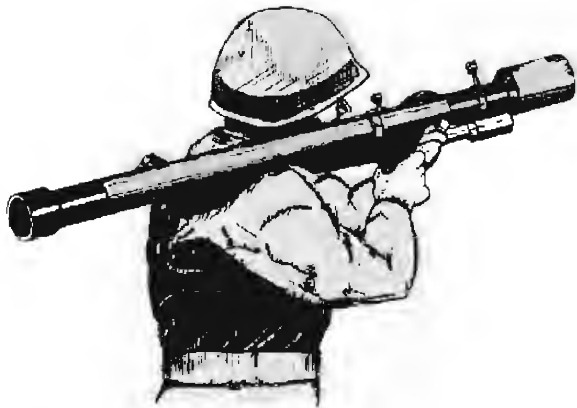
SA-3 GOA.

The SA-3 is a two-stage, solid-fuel, medium- to low-altitude, surface-to-air (SAM) guided missile. The ready missiles are transported in tandem on a modified truck, which is also used to help load them onto the launchers. A four rail launcher is also available with this system.

**SA-6 GAINFUL.**

The SA-6 is a low-altitude, surface-to-air guided missile with a ceiling of 66,000 feet and a range of about 37km. The missile is deployed as part of a battery containing one *STRAIGHT FLUSH* fire control radar vehicle; loader vehicles, and four triple transporter, erector, and launcher vehicles. The launcher vehicles are tracked like all the vehicles in the battery, but have components of the ZSU-23-4 chassis. The launcher rails can be traversed 360°.

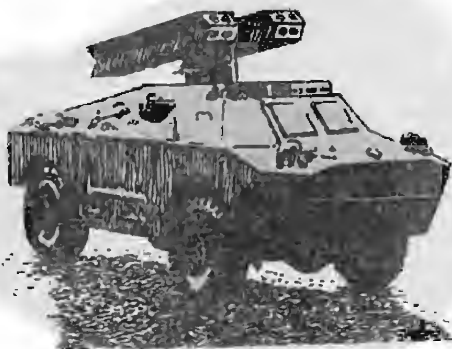




SA-7 GRAIL. The SA-7 GRAIL is a low-altitude, surface-to-air missile introduced in the late 1960's. It is a heat-seeking missile similar to the US Redeye. The SA-7 has a maximum range of about 2km and a maximum altitude of 10,000 feet. At least two versions of the SA-7 GRAIL exist.



SA-8 GRECKO. The SA-8 GRECKO is a highly mobile, amphibious SAM system capable of rapid movement with ground forces. This three-axle, amphibious vehicle carries four missiles. Each vehicle is equipped with an acquisition and tracking radar plus two guidance radars. It also contains an electro-optical tracker, probably television. One carrier can launch two missiles at the same target, with each guided on a different frequency. The missile has a minimum effective altitude of 150 feet and a maximum altitude of about 20,000 feet.

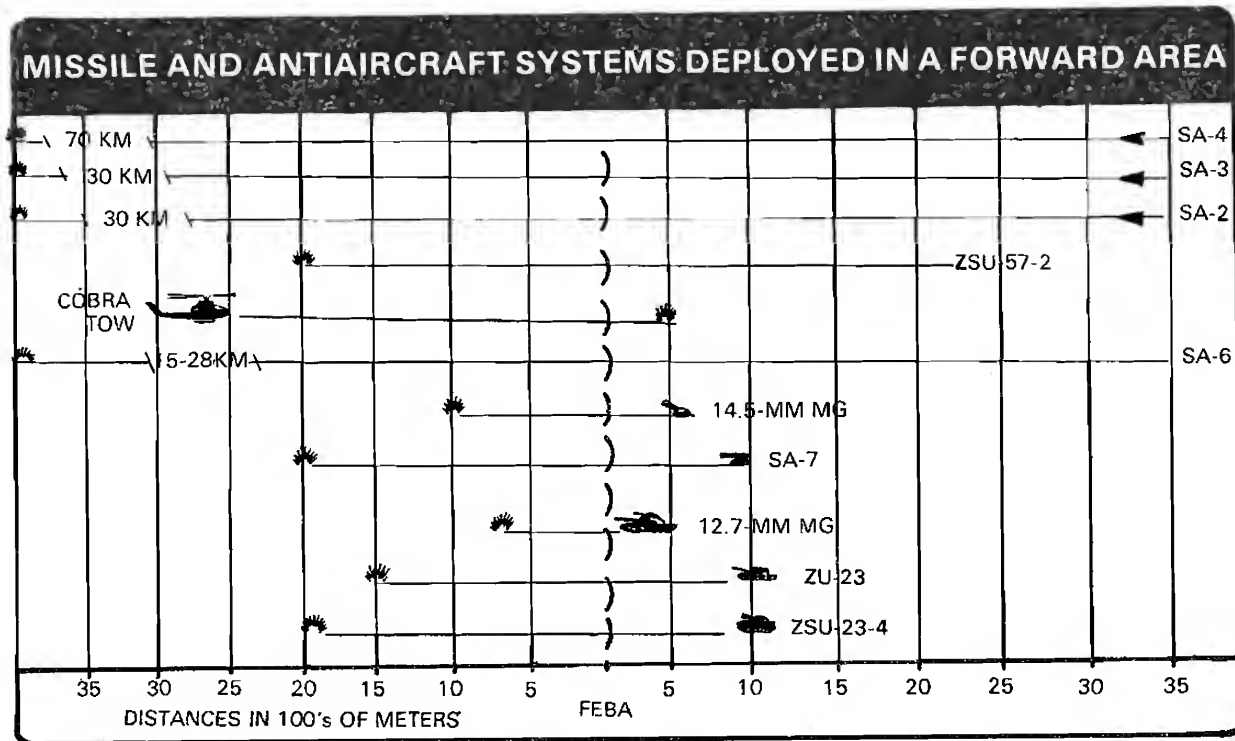


SA-9 GASKIN. The SA-9 GASKIN is also a heat-seeking missile system similar to the SA-7, but the SA-9 is longer and heavier with a larger warhead and greater range. The missile is carried and launched from quadruple canister launchers mounted on a modified BRDM 2 armored reconnaissance car.

The following antiaircraft weapons table represents current systems in service in Threat countries. The weapons are considered to be a cross section of their capability. But by no means all inclusive.

AIR DEFENSE ARTILLERY WEAPONS SYSTEMS

WEAPON SYSTEM	RANGE AND CAPABILITY	GUIDANCE	ASSIGNED
S-60, 57-mm antiaircraft gun. Mobility: Towed.	Range: 6,000m. Gun can be elevated from -2° to $+87^{\circ}$ vertically and traversed 360° .	Radar and optical-mechanical.	Antiaircraft regiment of a tank division and a motorized rifle division.
ZSU-57-2, 57-mm antiaircraft gun. Mobility: Self-propelled with fully tracked chassis.	Range: 4,000m. Gun can be elevated from $+2^{\circ}$ to $+87^{\circ}$ vertically and traversed 360° .	Optical-mechanical.	Air defense units in a tank regiment of a tank division and motorized rifle division.
ZSU-23-4, 23-mm antiaircraft gun. Mobility: Self-propelled with fully tracked chassis.	Optical range: 2,500m. Radar range: 3,000m. Gun can be elevated from $+8^{\circ}$ to $+87^{\circ}$ vertically and traversed 360° .	Radar and optical-mechanical.	Air defense units in a tank regiment, a motorized rifle regiment of a tank division, and a motorized rifle division.
ZU-23, 23-mm antiaircraft gun. Mobility: Towed on two-wheel carriage.	Range: 2,500m. Gun can be elevated from -10° to $+90^{\circ}$ vertically and traversed 360° .	Optical.	Air defense units in a motorized rifle regiment of a tank division and a motorized rifle division.
ZPU-4, quad-mounted 14.5-mm antiaircraft machinegun. Mobility: Towed on four-wheel carriage.	Range: 1,400m. Gun can be elevated from -8.5° to $+90^{\circ}$ vertically and traversed 360° .	Optical.	Air defense units in a motorized rifle regiment of a tank division and a motorized rifle division.
12.7-mm machinegun. Mobility: Mounted on combat vehicles.	Range: 1,000m.	Optical.	Platoon level weapon.



Strengths. Major strengths of the Threat anti-aircraft weapons are:

- **Versatility.** Weapons extend across a broad spectrum, ranging from small arms to anti-aircraft artillery and surface-to-air missiles. Anti-aircraft guns can also be used against ground targets.
- **Mobility.** Threat anti-aircraft weapons can move with ground elements and provide continuous air defense.

Weaknesses. Threat anti-aircraft weapons lack cover for crewmen, weapons, fire control systems, and radar. All can be destroyed or suppressed.

Suggestions. To fight and survive:

- **Fly the terrain.** Fly as close to the ground as pilot skill, navigation aids, and man-made or terrain obstacles permit.

- **Suppress.** Use a wide variety of means, including electronic countermeasures.
- **Carefully plan your mission** to take maximum advantage of terrain and suppression.
- **Remain unmasked no longer than 30-35 seconds** to engage targets.
- **Engage targets at maximum ranges (3,000-3,500m).**

REMEMBER
AA WEAPONS ARE NEVER
EMPLOYED SINGLY. IF ONE
FIRES ON YOU, ANOTHER IS
ABOUT TO.

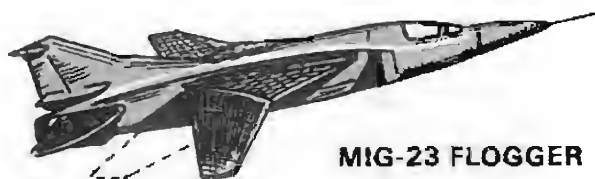
AIRCRAFT

Threat high-performance tactical fighters provide close air support and perform reconnaissance for Threat armored forces. Threat forces also have attack and utility helicopters.

Tactical Air Support. Threat tactical air support is controlled by ground force commanders. Initially, Threat tactical air attempts to gain air superiority. It then engages targets beyond artillery range, reinforces artillery fires, and attacks targets of opportunity. Often artillery preparation includes coordinated tactical air sorties.



SU-19 FENCER A



MIG-23 FLOGGER

The principal aircraft which may be encountered are the SU-19 Fencer A variable-geometric-wing fighter-bomber designed specifically for ground-attack missions; the MIG-23 Flogger with a ground-attack capability in addition to serving as a fighter-interceptor; the SU-7 Fitter B improved ground-attack aircraft; and the MIG-21 Fishbed, an older all-weather, single-seat fighter. Their armament includes rockets, guns, and bombs.



SU-7 FITTER



MIG-21 FISHBED

	SPEED	COMBAT RADIUS*
	MACH	NM
FENCER A	2 (+)	N.A.**
FISHBED	2 (+)	540
FITTER	2 (-)	290
FLOGGER	2.3	710

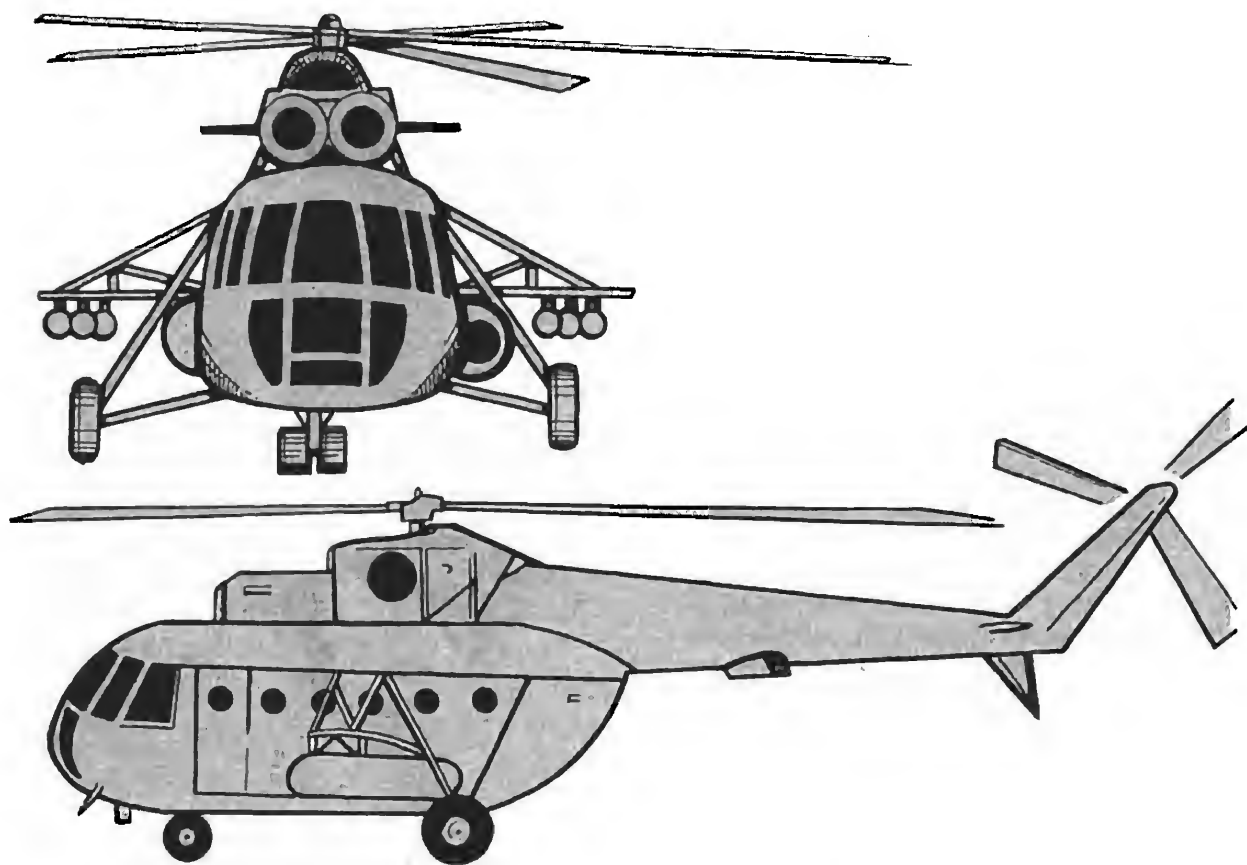
*With external fuel tanks.

**Not available.

Helicopters. Threat tactical employment of helicopters has greatly increased during the past few years. The Threat now employs cargo, lift, and attack helicopters in greater numbers than ever before. The attack helicopter now being deployed is the MI-24 Hind-D; however, the MI-8 Hip-E may also be employed in an attack role.

MI-8, HIP-E

The MI-8 Hip-E has six 32-shot 57-mm rocket pods, a nose-mounted 12.7-mm machinegun, and four rack-mounted ATGM's. It is currently the most heavily armed helicopter in the world.



12.7-mm A12.7P MACHINEGUN
ESTIMATED 1700-2000 ROUNDS
OF AMMO
RATE OF FIRE: 950 shots/MINUTE

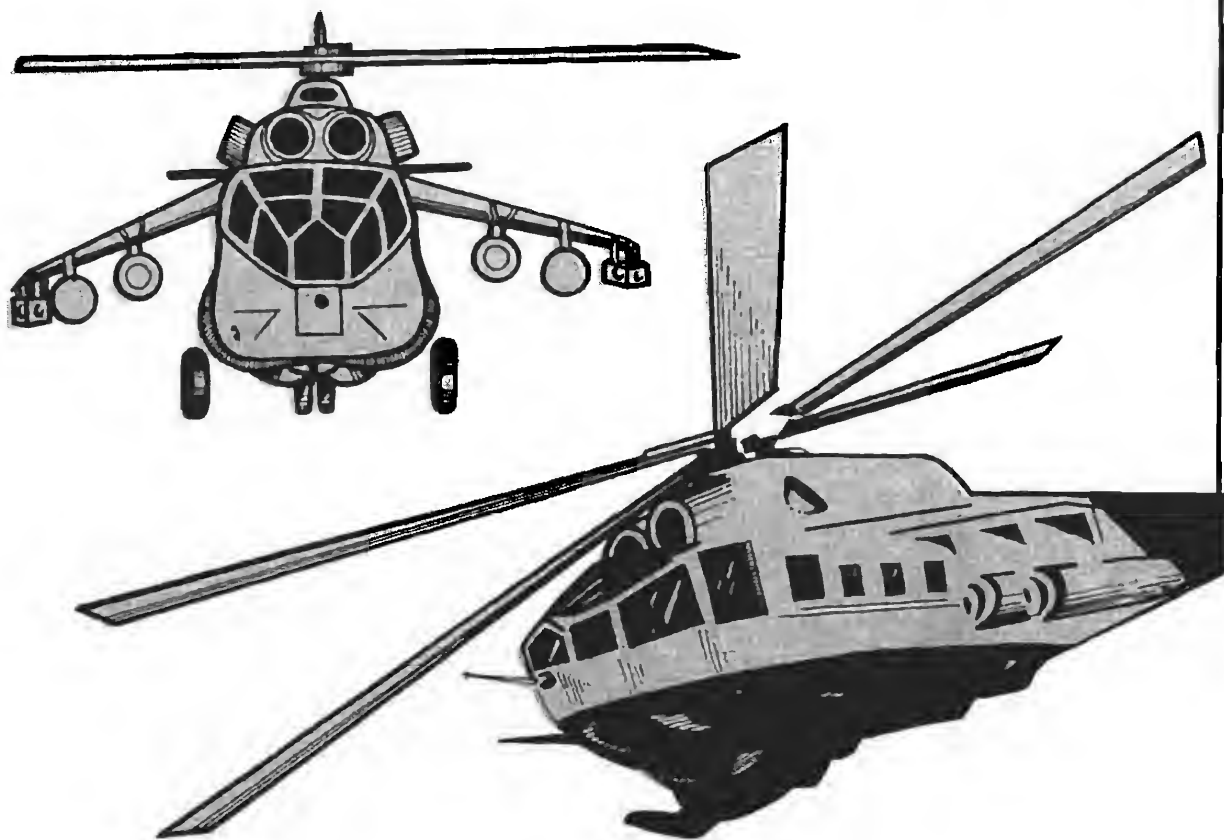
32-SHOT 57-mm ROCKET PODS
PODS PER SIDE: 3
ROCKETS PER SIDE: 96
TOTAL ROCKET LOAD: 192

ANTITANK GUIDED
MISSILE
(2 PER SIDE)

MI-24 HIND-D

The Hind-D mounts four 57-mm rocket pods, a Gatling-type machinegun in the nose turret, and four ATGM's. It has an estimated maximum speed of 312 kmph (170 knots) and a combat radius of 250 km.

The distinguishing feature of the Hind-D is the nose modification which incorporates two tandem bubble canopies and a chin-mounted gun turret.



The Hind-D maintains the same troop-carrying and external weapons stores capability as the Hind-A. Each pylon has two 32-shot rocket pods and two launch rails for antitank guided missiles.

THREAT TACTICS

OFFENSE

Threat forces attack in mass, normally in two echelons, and use a tank-heavy reserve. Threat forces try to mass so that they have a 3-to-1 advantage in tanks, artillery, and infantry. Threat attack tactics consist of penetrating forward positions, destroying the enemy in the main battle areas, seizing deep separated objectives to trap and destroy the defender, and continuing the advance. A typical attack scenario is:

Preparation. The attack begins with a massive artillery preparation to destroy all known and suspected defensive positions. This is often coordinated with tactical air sorties.

Attack. A tank-heavy spearhead force penetrates the defense, and succeeding echelons overwhelm the opponent.

At the time of penetration, Threat airborne/airmobile units are inserted to isolate parts of the defensive battle position, engage reserves, and cause widespread confusion. This Threat force is equipped with "suitcase" antitank guided missiles to destroy armored vehicles from the rear.

After penetration, tank-heavy reserves are sent through the breach in defenses to maintain the momentum of attacking echelons, link up with air launched units, complete destruction of the defending forces, and continue the attack.

See chapter 6 for greater detail of Threat offensive tactics.

DEFENSE

Threat forces defend only as a temporary measure to gain time to continue the attack. Defense in depth is their key to defense planning. A series of security and defensive zones, heavily supported by artillery and antitank weapons, wear down and destroy the attacker. Dummy positions are constructed to confuse the attacker. Tank-led counterattacks are directed against penetrations.

Security Zone. US cavalymen advancing against a Threat force first encounter the defensive security zone. This zone contains light reconnaissance tanks, scout vehicles with antitank guided missiles, infantry, and minefields—all supported by long range artillery and aircraft fires. The security zone is designed to harass and slow the attacker and make him deploy.

Main Defensive Belt. Reaching the main defensive zone, the attacker finds a series of battalion-size interlocking positions supported by extensive artillery. This zone will be strong in antitank weapons. Every man and weapon still available to the Threat try to stop and destroy the attacker. The Threat strong points force US units to deploy into areas designed for counterattacks by tank reserves. Here the Threat intends to destroy the attacking force.

NIGHT FIGHTING

Threat forces do not stop at night, but continue to operate using night vision devices. They consider darkness an advantage which must be seized. Most Threat night vision devices are infrared, and include weapon sights, surveillance devices, driving aids on all vehicles, sniper scopes, intrusion alarm devices, and metascope.

Threat night weapon sights for snipers and machinegunners give them a night range of about 300-400m. Artillery weapons are equipped with devices enabling night vision out to 800m for 57-mm guns and 1,000m for 122-mm guns. Tank gunners using infrared searchlights can see out to 1,000m directly in line with the main gun, but not to the sides. The tank commander has a separate infrared searchlight which allows him to look independently of the gunner to ranges up to 500m.

Observation posts can be equipped with ground-mounted infrared searchlights and telescopes with a night vision range of about 1,300m.

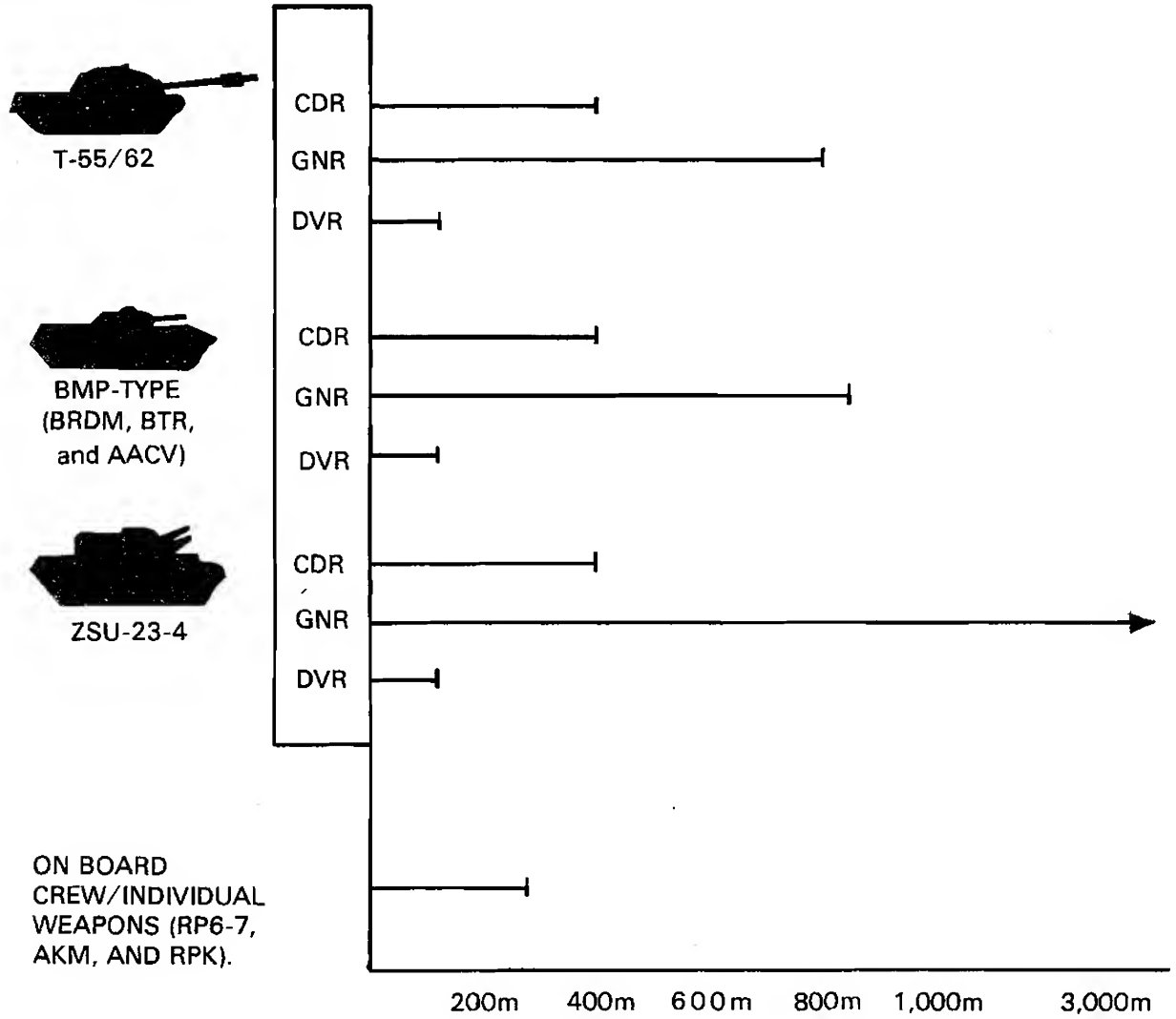
THREAT NIGHT VISION CAPABILITIES

		DEVICE	RANGE	SOURCE
T-54/55 T-10	Commander	TKN-1/3	400m	Active ir
	Gunner	TPN-1-22-M	800m	Active ir
	Driver	TVN-1	40m	Active ir
T-62	Commander	TKN-3	400m	Active ir
	Gunner	*TPN-1-22-M	800m	Active ir
	Driver	TVN-3	40m	Active ir
BMP BRDM BTR AACV	Commander	TKN-1/3	400m	Active ir
	Gunner	*TPN-1-22-M	800m	Active ir
	Driver	TVN-3	40m	Active ir
ZSU-23-4	Commander	TKN-1	400m	Active ir
	Gunner	Autotrack	3,000m	Radar
	Driver	TVN-1	40m	Active ir

*SOME T-62'S AND BMP-TYPE VEHICLES ARE BEING EQUIPPED WITH THE IPN 22M1 PASSIVE NIGHT SIGHT AS A REPLACEMENT FOR TPN 1-22-M. THE SIGHT IS BELIEVED TO HAVE A RANGE BETWEEN 700 AND 900M.

As seen in the following table, night observation equipment organic to both tank and motorized infantry units makes possible the full integration of all types of combat weapons/vehicles into a combined arms unit without harming their night operation capability.

**THREAT NIGHT TARGET DETECTION AND
ENGAGEMENT CAPABILITY**



SUMMARY

The Threat, with its vast numbers of manpower and variety of powerful weapons, can be overcome only by a US Army that is knowledgeable in enemy armament and tactics and has trained to defeat them. Cavalry should always keep in mind the Threat's strong and weak points, its characteristics and composition.

- The Threat soldier is tough and effective on the battlefield. He is often highly motivated and will endure great hardship.
- Threat weapon systems are highly mobile; nearly all their weapons are mounted on wheels or tracks. These systems also complement each other, working well together and providing overlapping fields of fire.
- Threat armored vehicles, though equipped with highly lethal weapon systems, can be suppressed and defeated. Cavalry should aim at these vehicles' most vulnerable points and take advantage of tank blind areas and dead spaces.
- Threat antitank weapons are lethal and effective but can be evaded, suppressed, or destroyed. Tanks should make abrupt high-speed changes in direction and speed to dodge Sagger's; fire placed in the area of the SPG, RPG, and Sagger launcher will kill or drive the gunner away.

PREPARING FOR COMBAT OPERATIONS

In order to fight it is necessary to prepare. Generally these preparations include:

- Receiving and analyzing missions and tasks.
- Preparing and issuing the necessary plans and orders.
- Organizing for combat.
- Executing and supervising execution of whatever orders are issued.

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PREPARING FOR COMBAT OPERATIONS

TROOP LEADING PROCEDURES

Troop leading procedures are the process by which a commander issues the necessary instructions to his subordinates so that the commander can accomplish his assigned mission. The lower the echelon, the more simple, direct, and rapid is this process. Nevertheless, all the steps should be taken even if they are taken in a matter of seconds. In other words, the troop leading steps should be an instinctive and automatic way of

thinking for all commanders. Once the battle starts, subsequent orders and responses must be fast, effective, and simple. This requires teamwork. It also requires commanders who can turn a mission-type order without detailed instructions into action to support the plan of the next higher commander. Elaborate troop leading procedures are not permissible if they reduce the responsiveness of the force. The eight steps to troop leading are:

- | | |
|----------------|--|
| STEP 1. | RECEIVE THE MISSION. |
| STEP 2. | ISSUE A WARNING ORDER. |
| STEP 3. | MAKE A TENTATIVE PLAN TO ACCOMPLISH THE MISSION. |
| STEP 4. | INITIATE THE NECESSARY MOVEMENT SEQUENCE. ★ |
| STEP 5. | RECONNOITER. |
| STEP 6. | COMPLETE THE PLAN. ★ |
| STEP 7. | ISSUE ORDERS. |
| STEP 8. | SUPERVISE AND REFINE. ★ |

These steps are not rigid. They can be modified to fit mission and situation. Some steps are often taken at the same time. Others

are considered throughout the operation when there is sufficient time.

STEP 1. RECEIVE THE MISSION.

Commanders may receive a mission in either an oral or written operation order (OPORD) or a fragmentary order (FRAGO). Upon receiving an order, the leader analyzes his mission and plans the use of available time.

STEP 2. ISSUE A WARNING ORDER.

A commander issues a warning order by telling his subordinates the mission, time it starts, and where the actual order will be issued. This will permit the best use of time available to plan and prepare. In a cavalry unit, a warning order is usually issued orally through the chain of command. All personnel must be kept informed of what they are to do and why they are to do it.

STEP 3. MAKE A TENTATIVE PLAN.

The commander should make a tentative plan of how he intends to accomplish his mission. Regimental and squadron commanders may make fairly formal mental estimates, for they normally have the training and experience, and a sufficiently complex mission to warrant this. When time is short and the mission uncomplicated, they may quickly produce their tentative plan. Troop and company commanders should have uncomplicated missions, and because their planning time is usually limited they too quickly produce tentative plans. Each commander knows his own unit situation, knows as much about the enemy as he can under the circumstances, knows the mission and what it requires, and applies all of this to the terrain in the assigned area. The tentative

plan he develops is the basis for coordination, unit movement, reorganization (if any), and reconnaissance.

STEP 4. ★ INITIATE THE NECESSARY MOVEMENT SEQUENCE.

The commander has many important matters on his mind at this point. Often the driving consideration is the absolute necessity for the proper use of available time. He must be ever mindful that his subordinate leaders also need time. The commander must reconnoiter to verify or modify his tentative plan; the unit may be required to move, and it may need reorganization for the tasks at hand. Subordinate leaders must also reconnoiter and plan, and crews and squads must ready their vehicles and adapt their weapons to the ground. All these things must be done almost at the same time, or at least with minimum loss of time. The commander must have a standing operating procedure. He must require practice until it can all be done smoothly, even when fragmentary orders require sudden mission changes, orders are received while moving, or any of the many situations common to cavalry operations. The ability to respond immediately to new mission requirements is one of the hallmarks of cavalry.

When the commander is called to receive an order he should take with him some other person of authority who can return to the unit to issue the warning order and move the unit, if necessary. The commander must decide instantly when and where he will issue the final order and convey this to his subordinates. At regiment and squadron level this other person can be the S3 or executive officer. At troop and company level, he is often the first sergeant. Whatever the system, it must work, for mission accomplishment often depends upon it.

STEP 5. RECONNOITER.

In order to move efficiently in areas that may or may not contain enemy units, and to maneuver effectively against enemy attackers or defenders, the commander must adapt his forces to the terrain to maximize their capabilities and minimize their vulnerabilities. Personal reconnaissance of as much of the assigned area as possible permits the commander to verify that his tentative plan is satisfactory or cause him to make minor modifications to that plan. Regimental commanders rarely have time to see the whole area; they may not see it at all. Squadron commanders are more likely to see their areas, and troop commanders must have the opportunity to see theirs. If the area can't be completely reconnoitered, due to distance or enemy presence, then detailed plans can be made only for that part which can be seen. Instructions for later actions must be given in general terms and confirmed or changed as the terrain is revealed during movement.

STEP 6. COMPLETE THE PLAN.

As a result of reconnaissance, the commander adds detail to his tentative plan, and he may even alter it. As the time for issuing the actual order draws near, the commander quickly reviews his concept and identifies specific tasks for all his subordinate units.

STEP 7. ISSUE ORDERS.

Most orders are issued orally, and if the issuing commander has conducted a reconnaissance, he usually issues orders from a vantage point in the assigned area. This permits him to point out particular terrain features on the ground as well as on a map, and eliminates time which might be wasted in driving back to a command post only to speak to subordinates who then would drive forward to reconnoiter. Regimental and squadron commanders may issue overlays

with their orders or they may, like troop commanders, only provide subordinates the opportunity to copy graphic control measures from the commander's map onto their own. If the unit is moving or already involved in an operation, orders may be issued over radio, by messenger, or face to face.

STEP 8. SUPERVISE AND REFINE.

Commanders (and staffs) must supervise to ensure that all necessary preparations are made to conduct the operation. This includes coordination, organization, combat support, maintenance, movement, and any other required actions. Once the operation is under way, the commander must make sure the plan is followed and must issue fragmentary orders to modify or refine the operation as the situation develops. *Supervision is continuous and as important as issuing the order.*

ESTIMATE OF THE SITUATION

Plans and orders are the result of an estimate of the situation. Estimating the situation is a natural process used in all decision making. It may require a few seconds or a few hours, depending on the level of command, the complexity of the situation, the experience of the leader, and the time available. At high levels of command an estimate may be a highly complex, written document. Usually at regimental level and certainly at lower levels the estimate is mental, rapid, and follows a logical sequence. The commander must evaluate:

MISSION—What must be accomplished?

SITUATION—What and where are the enemy forces? What terrain is available and how can it be used? What forces are available?

COURSES OF ACTION—What general ways are there to use available forces to accomplish this mission?

ANALYSIS OF COURSES OF ACTION—What are the good and bad aspects of each general way?

COMPARISON OF COURSES OF ACTION—Which way is best in this situation?

DECISION AND CONCEPT—What will be the scheme of maneuver, organization, and plan for fire support?

OPERATIONS SECURITY

Throughout the planning, preparation, execution, termination, and post-operation phases of an operation, every effort must be made to maintain security. Operations security (OPSEC) is an integral part of planning and conducting unit training and day-to-day operations at all levels of command.

Unit S2's and S3's work together to develop OPSEC protective measures. There are four logical steps in the OPSEC planning sequence:

- Determine enemy capabilities for obtaining information about the operation.
- Determine what information obtained by the enemy can compromise the operation and when he would

need the information in order to react.

- Determine what actions taken by the regimental/squadron or its subordinate units before an operation, if known and analyzed by the enemy, would provide him with the information he needs.
- Determine what protective measures are necessary and where they must be implemented in order to maximize operations security. Some OPSEC measures are:
 - *Deception* is the actions taken to mislead the enemy regarding current or intended operations.
 - *Physical security* is the use of security forces, barriers, and anti-intrusion devices to deny enemy access to facilities, areas, equipment, materiel, and personnel in order to protect operational information or activities.
 - *Signal security* is the use of communications security techniques (communication codes, secure voice equipment, RATELO procedures) and electronic security techniques (radio silence, proper positioning of radars and antennas, etc.) to prevent the disclosure of operational information.
 - *Information control* is the control of written, verbal, and graphic information in order to prevent the disclosure of operational information.

ORGANIZATION AND ORGANIZATION FOR COMBAT

ARMORED CAVALRY REGIMENT

Organization. An armored cavalry regiment is normally assigned to corps headquarters and contains:

Headquarters and Headquarters Troop.

One Air Cavalry Troop.

★ One Attack Helicopter Company.

Three Regimental Armored Cavalry Squadrons.

One Engineer Company.

Components of regimental headquarters and headquarters troop and what they do are:

Regimental Headquarters. This consists of the regimental commander and principal staff personnel for command, control, and administration of the regiment. Their duties are set forth in FM 101-5.

Headquarters Troop.

- **Troop Headquarters** provides administrative, supply, maintenance of vehicles and armament, and massing for troop and regimental headquarters personnel.
- **Regimental Headquarters Section** provides personnel and some vehicles and equipment for staff sections.
- **ADA Section** provides four shoulder-fired air defense weapon teams for use in the regimental area (chapter 7).
- **Command Vehicle Section** provides two armored personnel carriers for the regimental command group. These vehicles also may be used to augment command post security.
- **Fire Support Element** coordinates and advises the commander on the use of indirect fires (chapter 7).
- **Liaison Section** provides liaison personnel for coordination and exchange of information.

- **Medical Section** provides medical aidmen and drivers for unit level medical support and evacuation for headquarters and headquarters troop and air cavalry troop. The section leader is also the staff medical advisor.

- **Scout Section** provides reconnaissance and security for the regimental command post or command group.

- ★ ● **Aviation Unit Maintenance Platoon (AVUM)** provides four utility and six observation helicopters for command and control. The transport section provides eight utility helicopters for troop transport, emergency supply, evacuation and liaison. The platoon has its own class III resupply and aircraft organizational maintenance capability.

- **Communications Platoon** operates the regimental message center, maintains headquarters communication equipment and operates a radio teletypewriter station.

- **Tactical Air Control Party (TACP) (Augmentation)** comes from the supporting tactical Air Force (chapter 7).

- **Air Cavalry Troop.** See page 3-17.

Note. (USAREUR only) Armored cavalry regiments do not have an air cavalry troop assigned by MTOE. The TOE 17-59, Support Troop (AIR), contains:

Headquarters.

Service Platoon (AVUM).

Scout Platoon.

Command and Control Section.

Logistical Support Section.

Attack Helicopter Company.

★ An attack helicopter company assigned to the regiment contains:

Headquarters.

Operations.

Service Platoon (AVUM).

Scout Platoon.

Three Attack Helicopter Platoons.

For more information on organization for combat and employment of the regiment's attack helicopter company, see FM 17-50, Attack Helicopter Operations.

Regimental Armored Cavalry Squadron. See page 3-8.

Engineer Company. See page 7-12.

Organization for Combat. The regiment may be reinforced with maneuver battalions or task forces, air defense artillery, field artillery, engineer, military intelligence, Army Security Agency, signal, Army aviation, and combat service support units. Maneuver elements may be retained under regimental control or placed under one or more squadrons. Combat support unit employment is discussed in chapter 7. Combat service support unit combat organization and employment is discussed in chapter 8.

The regiment normally maintains unity of command and organizational integrity of squadrons, the air cavalry troop, and attached or supporting units by centralized planning and decentralized execution. Usually headquarters and headquarters troop is used tactically in two echelons: command posts (CP's) and trains. The regimental commander controls and coordinates operations using a tactical CP or main CP.

Tactical Command Post. During tactical operations, the commander usually operates forward of the main CP with a tactical CP sometimes called a command group. It contains the commander, staff officers of his choosing, communications facilities, and perhaps a small security force. As a mini-

mum, the tactical CP includes the S3, field artillery fire support officer, and air liaison officer. It is mounted in ground or aerial vehicles for movement to permit the commander to obtain on-the-spot knowledge and exercise personal leadership and control. Its location depends on the situation, the commander's personal desires, and need to maintain continuous communication with subordinate commanders and the main CP.

Main Command Post. The main CP contains a tactical operations center (TOC) and various headquarters and headquarters troop elements required for its support. The TOC is the hub of the main CP. It maintains communication and coordination with higher, lower, adjacent, and supporting units by receiving and forwarding reports on the tactical situation. It monitors and helps the commander coordinate operations in progress, simultaneously plans future operations and ensures liaison with higher and adjacent units. Its organization is flexible, depending in large measure on the commander's desires. The TOC normally includes the XO, the S2 and S3 sections, military intelligence and Army Security Agency elements, liaison personnel from attached and supporting units, a tactical air control party, and field artillery fire support element. The S3 is responsible for its functioning.

Also contained within the main CP is the headquarters of the headquarters and headquarters troop with elements of the maintenance section, communications platoon and the air defense section headquarters. Most, if not all, of the S1 and S4 sections are located in the trains. Normally, the S1 and S4 operate from the trains area. The main CP must be capable of frequent movement, operating on the move, and sustained 24-hour operations. The headquarters troop commander is responsible for overall functioning and security of the main CP. See appendix G for additional information concerning location, internal arrangement, and displacement of the main command post.

REGIMENTAL ARMORED CAVALRY SQUADRON

Organization. The regimental armored cavalry squadron contains:

Headquarters and Headquarters Troop.

Three Armored Cavalry Troops.

One Tank Company.

One Howitzer Battery (SP).

Squadron Headquarters. This consists of the squadron commander, primary staff officers, liaison officers, and the sergeant major for command, control, and administration of the squadron. Their duties are set forth in FM 101-5.

Headquarters Troop.

- *Troop Headquarters* performs the same functions as the troop headquarters of the regimental headquarters and headquarters troop (page 3-6).
- *Squadron Headquarters Section* performs the same function as the regimental headquarters section (page 3-6) and provides two armored personnel carriers for the squadron command group.
- *ADA Section* contains six teams and functions as its counterpart at regiment (page 3-6).
- *Fire Support Element* performs the same function as its counterpart at regiment (page 3-30).
- *Medical Platoon* operates the squadron aid station and provides a medical aid and evacuation team to each troop, howitzer battery, and tank company.
- *Communications Platoon* operates the squadron communications systems, provides limited message cen-

ter and messenger services, performs organizational maintenance on the signal equipment assigned to the headquarters troop, and provides secure backup radio teletypewriters.

- *Tactical Air Control Party (TACP) (Augmentation)* comes from the supporting tactical Air Force.
- *Maintenance Platoon* provides organizational maintenance, recovers and evacuates disabled ground vehicles, and manages repair parts for all squadron equipment except medical and signal.
- *Support Platoon* consolidates requests for, secures, and issues supplies, and transports the squadron's basic load of class III, class V, and supplies not issued.
- *Ground Surveillance Radar Section (Augmentation)* provides two teams, each with a medium range radar set. The section may be used intact or by teams (chapter 7).
- *AVLB Section* provides three bridge launchers. It may be used as a unit, or individual bridge launchers may be attached to armored cavalry troops or a tank company (chapter 7).

Armored Cavalry Troop. See page 3-10.

Tank Company. This company provides 17 main battle tanks for long range, high-velocity direct fire (FM 71-1).

Howitzer Battery (SP). This battery provides six 155-mm SP howitzers.

Organization for Combat. The regimental squadron may be reinforced with maneuver, combat support, and service units as is the regiment (page 3-7). Such reinforcement is usually accomplished by units one organizational size lower than provided a regiment. Whereas the regiment would be reinforced with one or more maneuver battalions or task forces, a squadron would normally receive a company or team. Combat support unit use is discussed in chapter 7. Combat service support unit combat organization and use is discussed in chapter 8.

The regimental armored cavalry squadron is normally used as part of its parent regiment, but may be attached to another regiment, a brigade, or higher headquarters. The squadron's mission and location, in relation to its parent regiment, are the determining factors. It may be used as organized, or it may be reinforced. Headquarters and headquarters troop use parallels

that of the regiment HHT in that the squadron operates two echelons: a main command post and trains.

Armored cavalry troops, tank company, and field artillery battery are used under control of the squadron. Helicopters, when available, should be used under control of the squadron; however, when the situation requires, they may be placed under control of the troop/company.

Specific missions may require temporary reorganization of one or more of the squadron elements. Normally at squadron level, this will involve cross-attachment of platoons between armored cavalry troops and tank company, or reinforcing tank and mechanized infantry.

Command control in the squadron parallels that of the regiment, differing only in scope of operations and level of command (page 3-7).

DIVISIONAL ARMORED CAVALRY SQUADRON

Organization. An armored cavalry squadron assigned to an armored or mechanized infantry division contains:

Headquarters and Headquarters Troop.

Three Armored Cavalry Troops.

One Air Cavalry Troop.

★ **Squadron Headquarters.** Headquarters components and their functions are similar to the regimental armored cavalry squadron headquarters (page 3-6).

Headquarters Troop. Headquarters troop components and their functions are similar to the regimental armored cavalry squadron headquarters troop (page 3-6) except:

★ The divisional squadron has no fire support element. Fire support coordination is provided by the artillery liaison party from the supporting artillery unit (chapter 7).

These sections are different:

- **Support Platoon.** In addition to supply and transportation sections, this platoon has a mess section with five mess teams, one for each troop of the squadron. Normally a team is attached to each troop for combat operations.
- **ADA Section.** This section has five teams (chapter 7).

Armored Cavalry Troop. See below.

Air Cavalry Troop. See page 3-17.

Organization for Combat. The divisional armored cavalry squadron may be used as organized, or reinforced as is the regimental armored cavalry squadron (page 3-9).

The divisional armored cavalry squadron is normally used under divisional control. The squadron, or one of its troops, may be temporarily attached to or placed under the control of a brigade.

Subordinate elements of the divisional armored cavalry squadron are organized for combat and used in the same manner as subordinate elements of the regimental armored cavalry squadron.

Command control in the squadron parallels that of the regiment, differing only in scope of operations and level of command (page 3-7).

Nonorganic fire support and trains use is discussed in chapters 7 and 8 respectively.

ARMORED CAVALRY AND CAVALRY TROOPS

Organization. Armored cavalry and cavalry troops are organized with three armored cavalry or cavalry platoons and a troop headquarters. The basic difference is that the armored cavalry troop is equipped with tracked vehicles, while the cavalry troop is equipped with wheeled vehicles. (Cavalry troops are organic to air cavalry squadrons of airborne and airmobile divisions.)

Troop Headquarters.

- **Headquarters Section.**
 - Command Control.
 - Administrative and Supply Functions.
 - Messing Functions. A mess section is organic to each troop/company/battery in the regimental armored cavalry squadron. Mess sections in the divisional armored cavalry

squadron are contained in the support platoon, but are normally attached to each troop during operations.

- **Maintenance Section** performs organizational maintenance, repair, and evacuation of all vehicles, weapons, and signal equipment.
- **Ground Surveillance Radar Section** provides medium range radar surveillance. It has two radar teams, each with one radar.
- ★ ■ **Mortar Section.** The three mortars are consolidated at troop level to ease training and maintenance, and to allow flexibility of employment. The preferred method of employment is with the section consolidated under the control of the senior mortar squad leader. However, when the width of the armored cavalry troop's area of responsibility becomes too

great to support all platoons from a central location, the troop commander may split the mortar section and place a mortar squad with each platoon. To provide responsive indirect fire support when the section is consolidated, the troop commander establishes a troop fire control net, set up by the FIST. The senior squad leader acts as the fire direction center (FDC) and has his radio on the fire direction net. One of the other vehicle radios is kept on the primary command frequency to monitor the tactical situation.

Armored Cavalry or Cavalry Platoon. See page 3-12.

★ **Organization for Combat.** Armored cavalry and cavalry troops normally maintain platoon integrity for reconnaissance and security operations. When conducting offensive and defensive operations, cavalry troops may be reinforced.

Tactical Command Post. The command post echelon consists of:

Troop Commander. The troop commander, accompanied by an artillery FO, normally operates from his command vehicle. The troop commander locates where he can best influence the situation. Most frequently, this will be immediately behind the lead element, on terrain favorable for com-

munication, observation, and control. The commander must not become so engrossed in a single platoon action that he loses control of the overall troop mission.

★ **Command Post.** The troop CP is organized around the troop headquarters' armored personnel carrier, or wheeled vehicle in the cavalry troop, and is supervised by the executive officer or first sergeant. It monitors and helps coordinate operations and sends reports to higher headquarters. The CP is located in a covered and concealed position which facilitates communications with the troop commander, the platoons, the squadron main CP or other CP's with which coordination is required (appendix G).

★ **Ground Surveillance Radar Section.** The ground surveillance radar section may be used under troop control, or the section or a radar team (each team has one radar) may be attached to a platoon. If mission or terrain conditions do not permit locating the radar near a platoon, it may be necessary to assign scouts to provide security (chapter 7).

★ **Fire Support Team (FIST).** The personnel and equipment that make up the FIST provide a responsive and flexible team at the troop level. All FIST's are capable of employing one or more platoon forward parties. The Armor/Cavalry FIST consists of a FIST Chief (LT), a Fire Support SGT (E6), a Fire Support SP Driver (E4) and two radiotelephone operators (assistant FO's, E3). For more information, see TC 6-20-10.

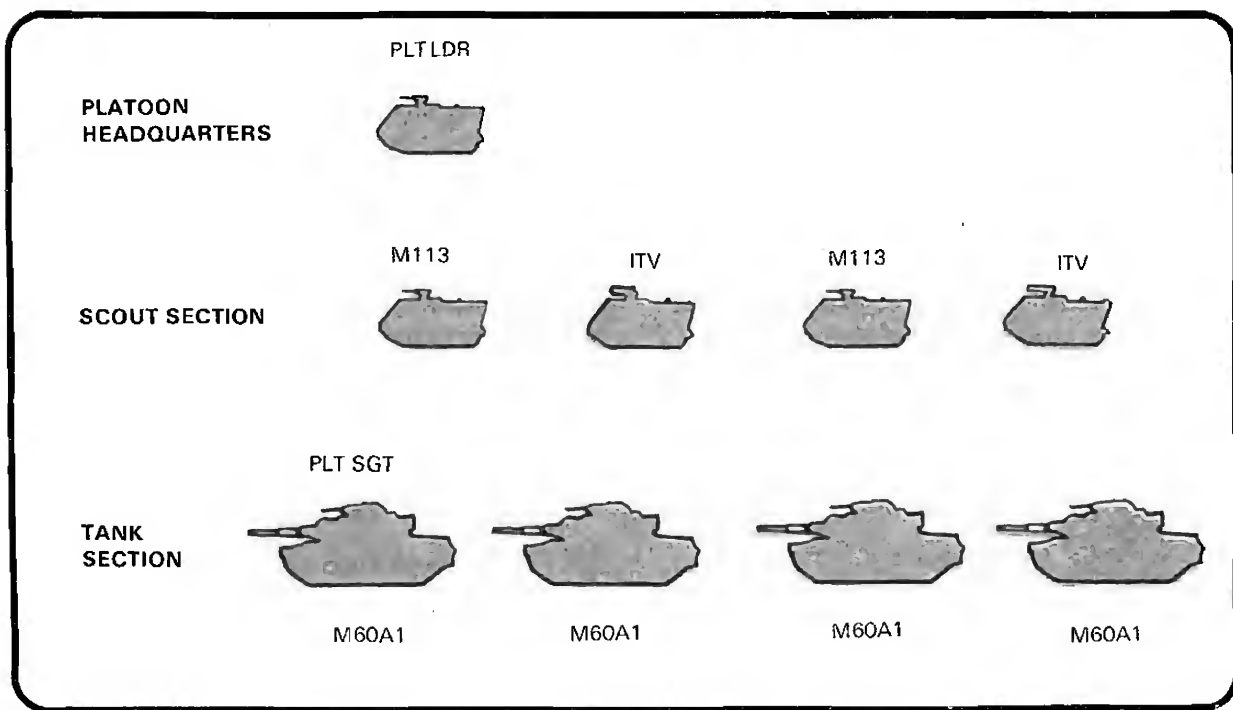
Trains. An armored cavalry or cavalry troop will most often organize trains as described in chapter 8.

ARMORED CAVALRY AND CAVALRY PLATOONS

Organization. The armored cavalry platoon is the basic maneuver element of an armored cavalry troop. The cavalry platoon is the basic maneuver element of the cavalry troop organic to airborne and airmobile

divisions. The basic difference is the cavalry platoon has wheeled instead of tracked vehicles.

Components of platoons and what they do are:



Platoon Headquarters. The platoon leader is mounted in a scout vehicle with a crew of three: driver, senior scout (vehicle commander), and a scout observer. The platoon leader deploys and *controls the platoon* within the troop commander's concept of the operation. Armored cavalry platoon leaders usually cannot see all of their platoon at one time. Therefore, they must learn to manage their assets; give thorough, well thought-out orders; and anticipate that they and their men may have to make independent decisions at critical times.

Scout Section (Two Scout Squads). Scouts are the basic information gathering element of the platoon. They collect and report information, conduct patrols, prepare or destroy obstacles, and participate in offensive and defensive actions when directed by the platoon leader. To perform their mission, *the scouts must frequently dismount* to reduce the chances of being detected.

SCOUT SQUAD

SSG (SQD LDR)
SP4 (DRIVER)
PFC (SCOUT)
PFC (SCOUT)



M113

SGT (ASST SQD LDR)
SP4 (DRIVER)
PFC (SCOUT)
PFC (SCOUT)
PFC (SCOUT)



ITV M113

Tank Section. The tank section is composed of four main battle tanks. The tanks provide rapid, high velocity antiarmor fires. The section is also prepared to help the scout section gather and report information.

SFC (PLT SGT)
SP5 (GUNNER)
PFC (LOADER)
SP4 (DRIVER)



M60A1

SSG (TK CDR)
SP5 (GUNNER)
PFC (LOADER)
SP4 (DRIVER)



M60A1

SSG (TK CDR)
SP5 (GUNNER)
PFC (LOADER)
SP4 (DRIVER)



M60A1

SSG (TK CDR)
SP4 (GUNNER)
PFC (LOADER)
SP5 (SR DRIVER)

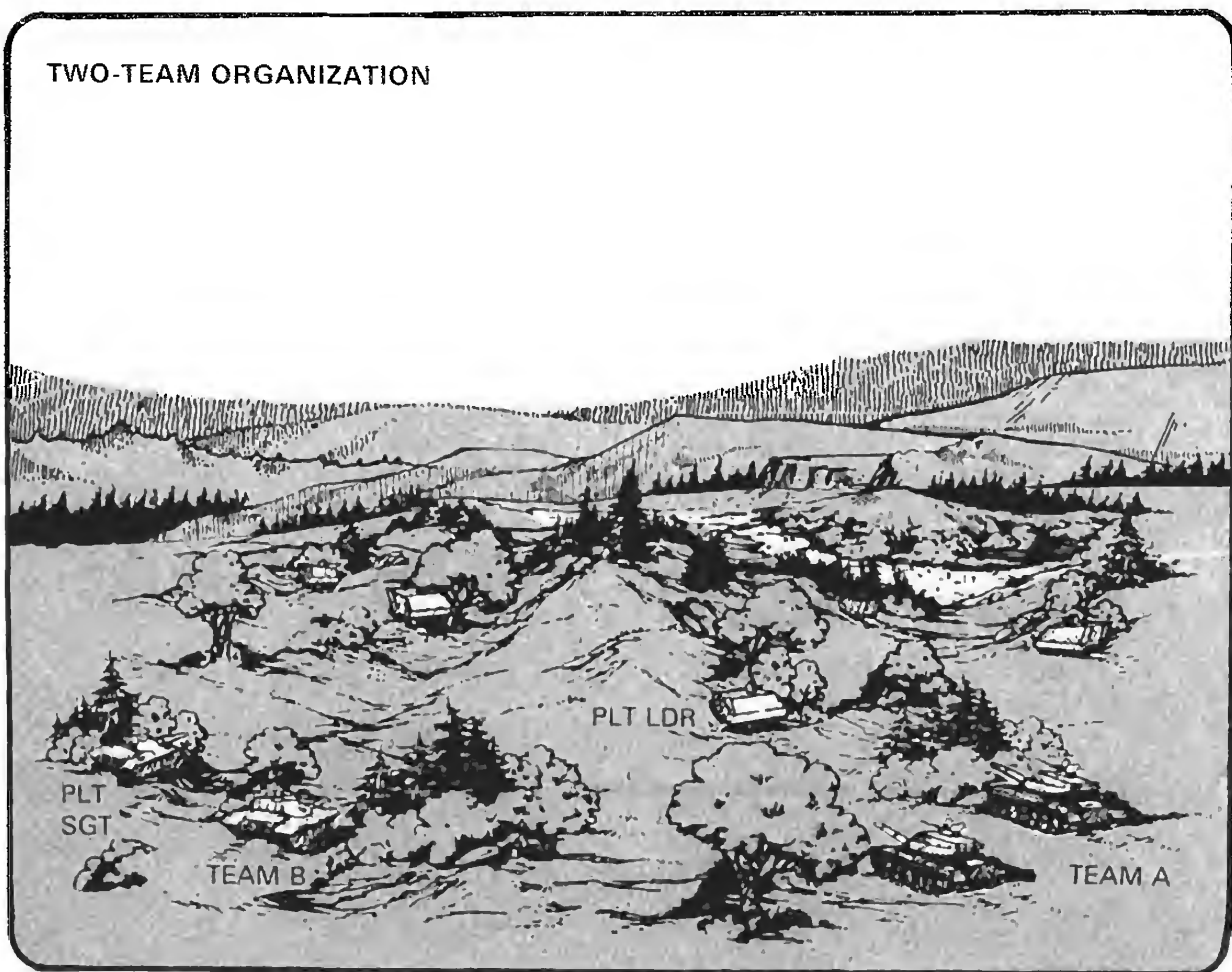


M60A1

Organization for Combat. An armored cavalry platoon leader organizes his platoon to accomplish the mission based on his assessment of the enemy in his area, the terrain he must operate over, the men and equipment he has available, and the mission he must perform. Therefore, the organization for combat of a particular platoon may differ from those depicted here or from the formation used by an adjacent platoon. Whenever possible, scouts are employed in pairs.

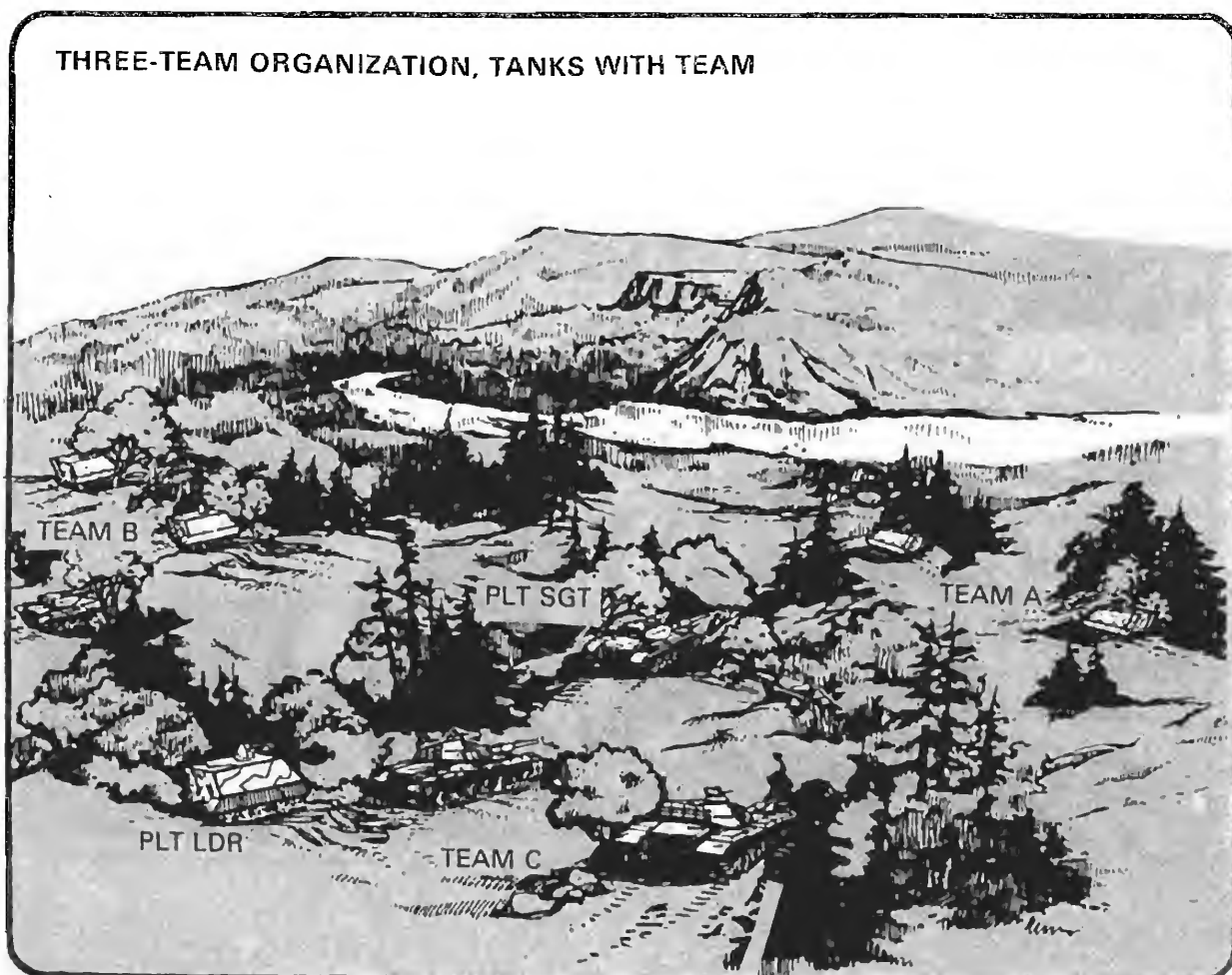
Two-Team Organization. Normally, an armored cavalry platoon will organize into two teams. This readily accommodates mission accomplishment, eases mutual support, and enhances command and control. Team A consists of one scout squad and two tanks and is controlled by the platoon leader from his scout vehicle. Team B consists of one scout squad and two tanks, controlled by the platoon sergeant from his tank.

TWO-TEAM ORGANIZATION

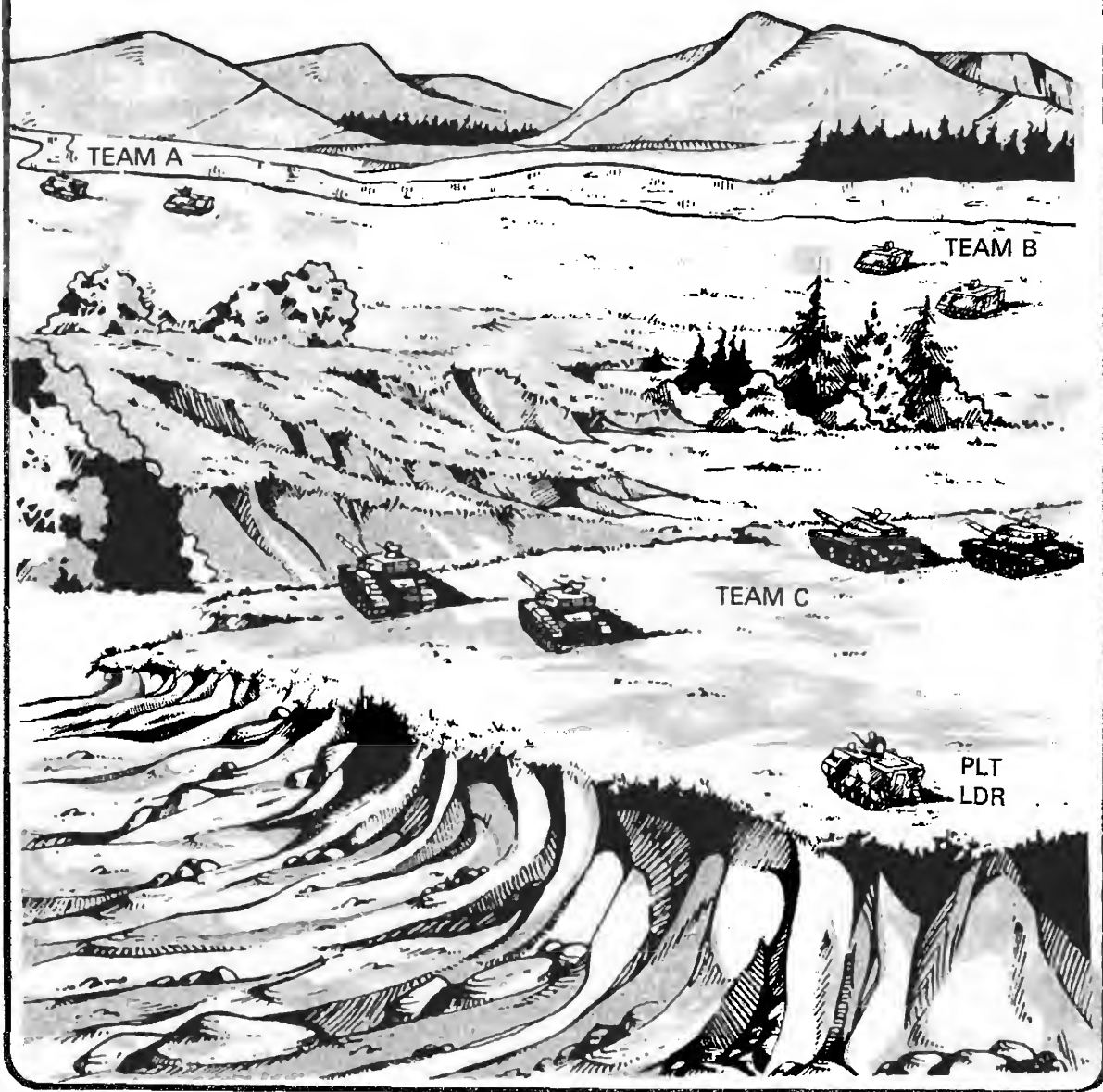


Three-Team Organization. Another method of organizing the platoon for combat is in three teams. There are two basic versions of the three-team concept. One is with tanks in each team. This organization is useful when the area to be covered is large such as a reconnaissance in zone, when the terrain is open, or when the enemy situation indicates the necessity of tanks being employed with the scouts. Team A, led by the platoon sergeant, consists of one scout squad and one tank. Team B is organized the same as Team A, but is led by an NCO other than the platoon sergeant. Team C is the platoon leader and the remaining two tanks. The other version is with the tanks consolidated. This method is useful when the platoon is occupying a battle position or the zone to be covered in a reconnaissance is narrow. Teams A and B each consist of a scout squad. Team C is the four tanks and the platoon leader.

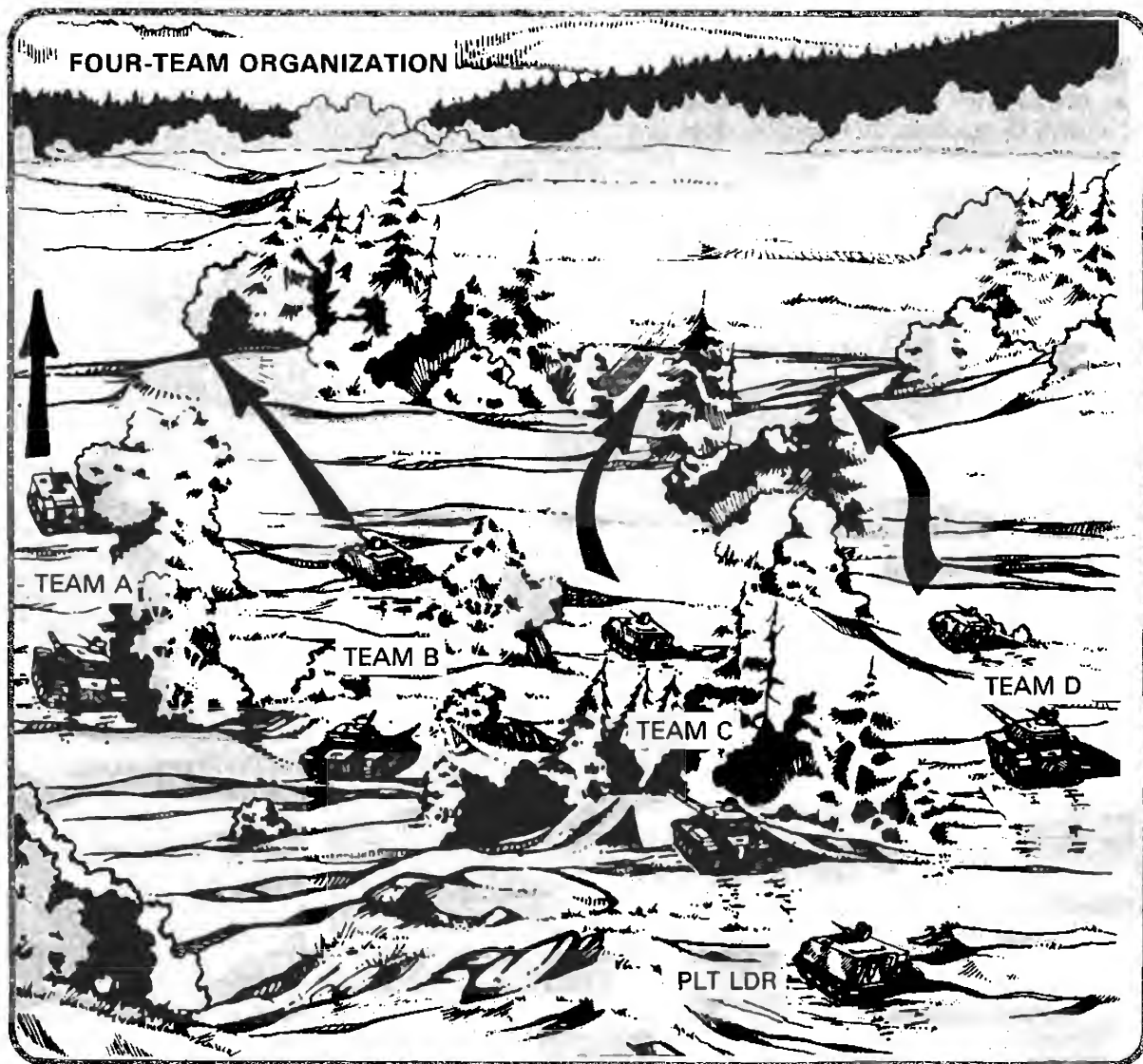
THREE-TEAM ORGANIZATION, TANKS WITH TEAM



THREE-TEAM ORGANIZATION, TANKS CONSOLIDATED



Four-Team Organization. Another platoon organization for combat is the four-team concept. It is used when the area to be covered is very wide and enemy contact is not likely. It is also used when the area contains multiple routes. Each team consists of one scout vehicle and one tank, with the platoon leader going where he can best control his platoon. As the scouts are not working in pairs, this concept should be used only when no other organization for combat will do the job.



AIR CAVALRY

Air cavalry units perform the same missions as ground cavalry and are therefore complementary parts of the cavalry system. Air cavalry provides an increased capability to rapidly reconnoiter and maintain surveillance over wide, relatively open areas. Air cavalry units may operate as organized, or may be reinforced with other maneuver, combat support, and combat service support units. Air cavalry units may be task organized within themselves. Air cavalry does not

have the closing and staying power of ground cavalry, but does have greater mobility. Mobility helps expand the area of battle, particularly in early stages, thus reducing enemy reaction time and ensuring more time for reaction of the friendly main body. Once the battle is joined, air cavalry should not be relegated to rear areas, but should be used with other maneuver elements. How this is done is explained in chapters 5 and 6.

AIR CAVALRY SQUADRON

Organization. Air cavalry squadrons are assigned to corps, infantry, airborne, and airmobile divisions and to air cavalry combat brigades.

An air cavalry squadron (separate) assigned to corps or an air cavalry squadron assigned to an infantry division contains:

Headquarters and Headquarters Troop. The components of headquarters and headquarters troop and their functions are similar to the regimental armored cavalry squadron headquarters and headquarters troop (page 3-8), except:

- *Aviation Platoon*, in addition to providing command and control aircraft to squadron headquarters, contains an aircraft maintenance section and an aviation support section.
- *Aviation Intermediate Aircraft Maintenance Platoon (AVIM)*, pro-

vides a direct support aircraft maintenance capability for all squadron aircraft.

- *Support Platoon* contains all mess teams.
- *ADA Section* contains five air defense weapons teams.

★ *Three Air Cavalry Troops.* See page 3-20.
Armored Cavalry Troop. See page 3-10.

An air cavalry squadron assigned to an airmobile division contains:

Headquarters and Headquarters Troop. The components of headquarters and headquarters troop and their functions are similar to the regimental armored cavalry squadron headquarters and headquarters troop (page 3-8), except:

- *ADA Section* has five shoulder-fired air defense weapons teams.
- *Support Platoon* does not contain a transportation section, but does contain a medical section.
- *Aviation Platoon* is identical to the aviation platoon of headquarters troop, separate air cavalry squadron.

★ *Three Air Cavalry Troops*. See page 3-20.

Cavalry Troop (Wheeled Vehicle Mounted). See page 3-10.

An air cavalry squadron assigned to an airborne division contains:

Headquarters and Headquarters Troop. The components of the headquarters and headquarters troop and their functions are similar to the regimental armored cavalry squadron headquarters and headquarters troop (page 3-8), except:

- *Aviation Platoon* is identical to the aviation platoon of headquarters troop, separate air cavalry squadron.
- *Support Platoon* does not contain a transportation section, but does contain a medical section.
- *ADA Section* has five shoulder-fired air defense weapons teams.

- *Direct Support Aircraft Maintenance Platoon* provides direct support aircraft maintenance for all squadron aircraft.

- *Medical Section* provides the same services as the medical platoon.

★ *Three Air Cavalry Troops*. See page 3-20.

Cavalry Troop (Wheeled Vehicle Mounted). See page 3-10.

An air cavalry squadron assigned to an air cavalry combat brigade contains:

Headquarters and Headquarters Troop is organized the same as that of the Separate Air Cavalry Squadron.

★ *Three Air Cavalry Troops*. See page 3-20.

Organization For Combat. Just as with any other unit, tactical integrity of an air cavalry squadron should be maintained. Sometimes, it may be necessary to place a troop OPCON to a brigade which is being deployed for a special mission.

Like armored cavalry, an air cavalry squadron may be reinforced with maneuver, combat support, and combat service support units. The squadron headquarters and headquarters troop is used in two echelons: an OIC and trains.

At times, the task organizing of one or more air cavalry troops and, if assigned, the ground cavalry troop may be necessary. The squadron commander may cross-attach to form troop teams containing the desired ratio of aeroweapons, aeroscouts, aerorifle, and ground cavalry platoons. The same factors applicable to task organizing a ground cavalry troop apply.

AIR CAVALRY TROOP

Organization. Air cavalry troops consist of a troop headquarters, flight operations section, service platoon, and three maneuver platoons.

Troop Headquarters provides administration and command control.

Flight Operations Section performs liaison and coordination for tactical requirements, performs related logistical support, and monitors combat operations of the troop.

Service Platoon performs organizational maintenance on troop aircraft, vehicles, weapons, and signal equipment. It requests, receives, issues, stores, and maintains troop supplies including POL and ammunition.

The *three maneuver platoons* are:

- *Aeroscout Platoon*, equipped with light observation helicopters, provides the primary reconnaissance and surveillance capability.

★ ■ *Reconnaissance Platoon*, provides a limited ground reconnaissance capability to each cavalry troop. The employment of this platoon as an integral part of the troop is discussed in detail by mission later in this manual.

- *Aeroweapons Platoon*, equipped with four attack helicopters and five aeroweapons helicopters capable of carrying automatic weapons, grenade launchers, folding fin aerial rockets, and antitank guided missiles, provides a mix of antitank firepower and high volume direct aerial fires. Attack helicopters equipped with antitank missiles are a powerful weapons system with a significant mobility differential over ground elements and are capable of standing off and defeating heavy armor or other hard targets. In the absence of an armor or mechanized infantry threat, it may be desirable to initially leave these aircraft on the ground, available as the situation develops. Other aeroweapons helicopters, capable of carrying automatic weapons, grenade launchers, and folding fin aerial rockets, provide an immediate aerial suppressive fire capability. Helicopter gunnery techniques are set forth in FM 17-40 and TC 17-17.

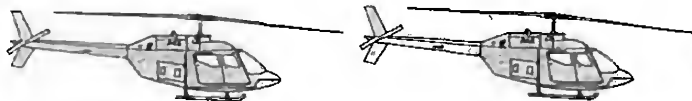
Organizations for Combat.

Troop Headquarters. The air cavalry troop headquarters is normally organized for combat operations into a command post and trains. The *CP* is organized around the flight operations center. It may be located near the squadron *OIC* or at the troop operating base. An air cavalry troop *CP* performs the same functions as a ground cavalry troop *CP*; in

addition, it coordinates scheduling missions and allocation of assets and provides unit flight-following services for troop aircraft. The troop commander controls the troop from his command helicopter or *CP*.

Platoons. The air cavalry troop commander will task organize the troop considering the factors of METT. He may do so in several ways:



- He may form teams of two or more aircraft to work directly under the troop commander's control. For instance:



Two scout helicopters may be used for reconnaissance when enemy contact is not likely. Such teams serve to maximize the reconnaissance effort and conserve the operational readiness of aeroweapons aircraft.

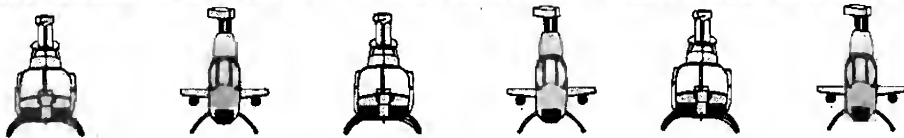



One scout helicopter and one aeroweapons helicopter may be used when contact is possible or expected. This organization permits fielding the greater number of teams for reconnaissance and surveillance missions.

	<p>Two aeroweapons helicopters and one scout helicopter may be used when contact is expected or gained.</p>
	<p>A scout helicopter, an aeroweapons helicopter, and a reconnaissance squad provide the capability to immediately put troops on the ground to reconnoiter, establish OP's or secure critical points.</p>

- Other teams may be formed by different combinations and numbers of aircraft depending on mission. For example:

- Provisional platoons of aeroscouts and aeroweapons may be formed. The reconnaissance platoon may also be included in this organization or left as a separate platoon.

	<p>1ST PLATOON</p>
	<p>2D PLATOON</p>

SUMMARY

In order to fight, it is necessary to prepare. These preparations include:

- Reviewing and analyzing missions and tasks.
- Preparing and issuing the necessary plans and orders.
- Organizing for combat.
- Executing and supervising execution of whatever orders are issued.

Troop leading steps are the process by which a commander issues the necessary instructions to his subordinates so that the commander can accomplish his mission. The commander must:

- Receive the mission.
- Issue a warning order.
- Make a tentative plan.
- ★ ■ Initiate the necessary movement sequence.
- Reconnoiter.
- Complete the plan.
- Issue orders.
- Supervise and refine.

These steps are not rigid and can be modified to fit mission and situation.

CHAPTER 4

MOVEMENT TECHNIQUES

The first and most important requirement in cavalry combat is for the cavalry unit to SEE the enemy; SEE him first and SEE him farther away than the friendly unit can be seen. In order to do this, it is necessary to MOVE on the battlefield. Once the enemy is SEEN or contacted, then it is necessary to MOVE forces into position to accomplish whatever the cavalry task may be—reconnaissance or security. And so the ability to MOVE, essential to all combat operations with all combined arms formations, is even more essential to cavalry, for not only does it enable the cavalry to fight, but permits SEEING the enemy early—a must in cavalry combat.

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Since the ability to MOVE is an essential characteristic of both primary tasks of cavalry, MOVEMENT is described in this separate chapter. In later chapters, principles of reconnaissance and security operations are described in detail, but remember that the movement techniques described in the following paragraphs are common in both.

In battle, all movement is governed by two basic principles: TERRAIN and OVERWATCH.

Most combat operations begin with a movement to contact. This is true of cavalry operations. In a march to contact, three techniques of moving along the terrain are used: traveling, traveling overwatch, and bounding overwatch. The likelihood of enemy contact determines which technique is used.

Why. A moving unit usually makes contact with the enemy at the time and place of the enemy's choosing. This is especially true of cavalry. To offset the enemy advantage, the cavalry leader must use traveling, traveling overwatch, or bounding overwatch. Each technique is based on the concept of a lead element and an overwatch element. Contact is made by the smallest possible cavalry element, and the unit is in the best possible posture to react to the enemy presence. The proper movement technique uses terrain and facilitates control by the leader. When contact is made, fire and maneuver begin, facilitated by correct dispositions of the moving force.

When. Cavalry uses these movement techniques in all operations. Once contact is gained, the leader applies the actions on contact described in chapter 5, "Reconnaissance" and chapter 6, "Security."

SELECT A MOVEMENT TECHNIQUE BASED ON THE LIKELIHOOD OF ENEMY CONTACT

MOVEMENT TECHNIQUE

CONTACT

TRAVELING	NOT LIKELY
TRAVELING OVERWATCH	POSSIBLE
BOUNDING OVERWATCH	EXPECTED

OTHER CONSIDERATIONS

With the introduction of the improved TOW vehicle (ITV), Dragon, and the main battle tank (MBT) into the platoon, questions about how these weapons systems affect cavalry missions are bound to arise.

To answer these questions, it is necessary to examine what a tactical unit is expected to do and the weapons/equipment that are provided. A cavalry unit or any tactical unit, from squad to squadron, has been formed to accomplish a specific set of tasks. Regardless of how that tactical unit is equipped, *these tasks must be performed*. As an example, a scout squad's job is to gather information about the enemy and area of operation. This job is critical to the successful completion of the larger unit's mission. It must be performed regardless of what vehicle, weapon, and equipment the scout squad has or does not have. Whether mounted on a 1/4-ton vehicle, M113, CFV or ITV, whether armed with a caliber .50 machinegun, automatic cannon, or TOW, the scout squad's basic task remains information acquisition.

In looking at how the TOW and main battle tank affect an armored cavalry platoon's battlefield movement techniques, we

should first examine how terrain limits that movement. The platoon provides for its own battlefield security by using the techniques of overwatch and suppression. The length of a bound is determined by the terrain and the range of the overwatch vehicles' weapons, with terrain being the greater limiter.

In discussing battlefield movement techniques, you must consider what it is you want your suppressive fires to do for you and the capabilities/limitations of the available weapons to do it.

When an overwatch element places suppressive fires on an enemy, it does so to allow the exposed bounding element a brief time to maneuver and deploy. Suppression may vary from reducing visibility, which limits the enemy's ability to acquire targets, to destroying the enemy. The degree of suppression required is whatever causes the enemy gunner to cease effective fire long enough to allow the bounding element time to gain cover. If the overwatch element is slow to respond, the enemy gunner may have time to accurately guide his missile or fire a second round, which could be fatal to the bounding element.

The chart below gives a quick analysis of the platoon's major weapon systems' suppressive fire capability.

For more information see respective field and technical manuals.

When deciding which element overwatches during battlefield movement, consider your cavalry unit mission, terrain, requirement for overwatch, and necessity for rapid and effective suppression, and the capabilities and limitations of your weapon systems. Obviously, the tank is the most effective overwatch system, capable of placing high velocity, rapid fire on both point and

area targets. The tank is your primary overwatch vehicle. For overwatch within the scout squad, the relatively short moves of the bounding element, the minimum range factors and slow employment speed of the TOW and Dragon missiles, and the need to quickly suppress an enemy gunner, the caliber .50 and 7.62-mm machineguns may be best. There may be times when terrain allows you the range to use TOW in the overwatch, but remember, those five troopers in the ITV are scouts, and if you leave them behind as overwatch, you've just cut your information gathering power in half.

WEAPON	RANGE		VELOCITY		TARGET COVERAGE		LETHALITY		
	MAX EFF	MIN	HIGH	LOW	AREA	POINT	TANK	TRUCK	TROOPS
TANK 7.62-mm MG	900m		X		X			X	X
Cal .50 MG	1,500m		X		X			X	X
105-mm	2,000m		X			X	X	X	X
ITV TOW	3,000m	65m		X		X	X	X	
7.62-mm MG	900m		X		X			X	X
M113A DRAGON	1,000m	60m		X		X	X	X	
Cal .50 MG	1,500m		X		X			X	X

ENEMY

Due to the lethality of modern weapons, cavalry must make every effort to operate without being seen. Exposure to enemy observation and fires *must* be minimized. Of primary importance is the active use of terrain, especially when moving against a hidden enemy. Cavalry's best protection against enemy weapons is the terrain. Hills, depressions, woods, brush, and a wide variety of other natural features can provide protection to both mounted and dismounted elements. Each movement technique uses terrain to gain protection from enemy weapons and maximize cavalry firepower and mobility.

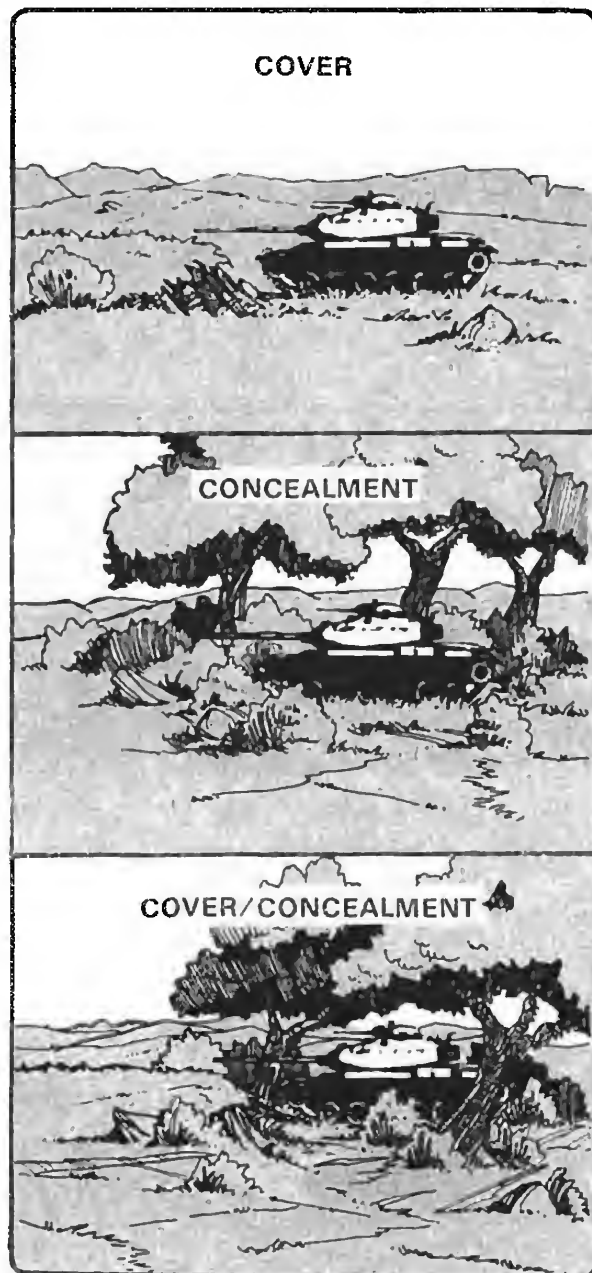
USE OF TERRAIN

Cavalry units must make maximum use of the natural cover and concealment in order to survive and accomplish their missions. Cover is protection from fire; concealment is protection from enemy observation. Cover should be used whenever possible. If there is no cover, the concealment offered by trees, shadows, brush, and houses should be used. Camouflage is also an active measure. It is blended with natural cover and concealment.

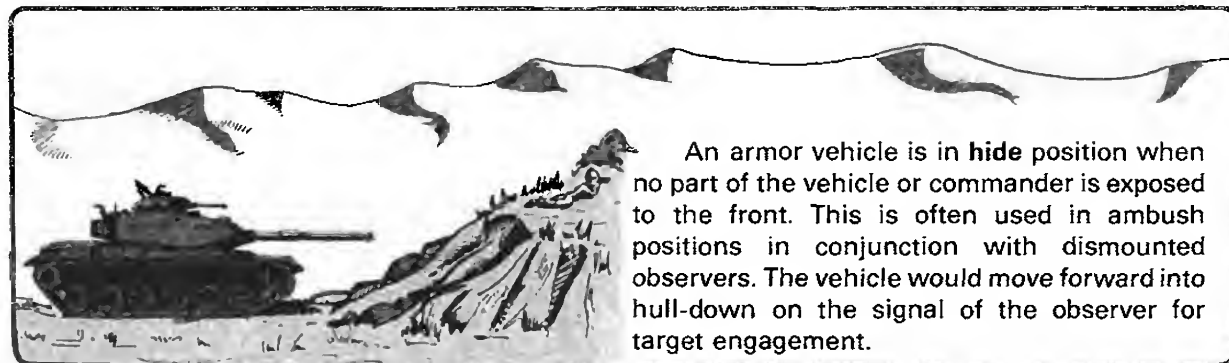
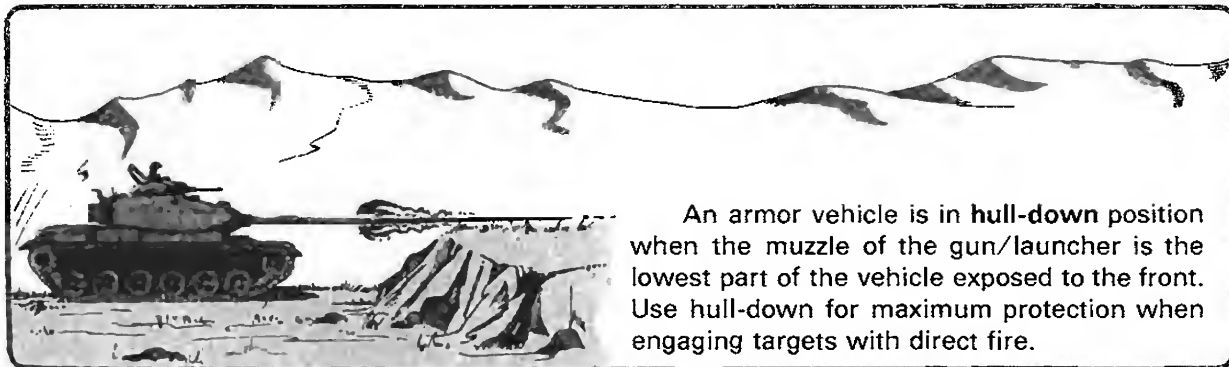
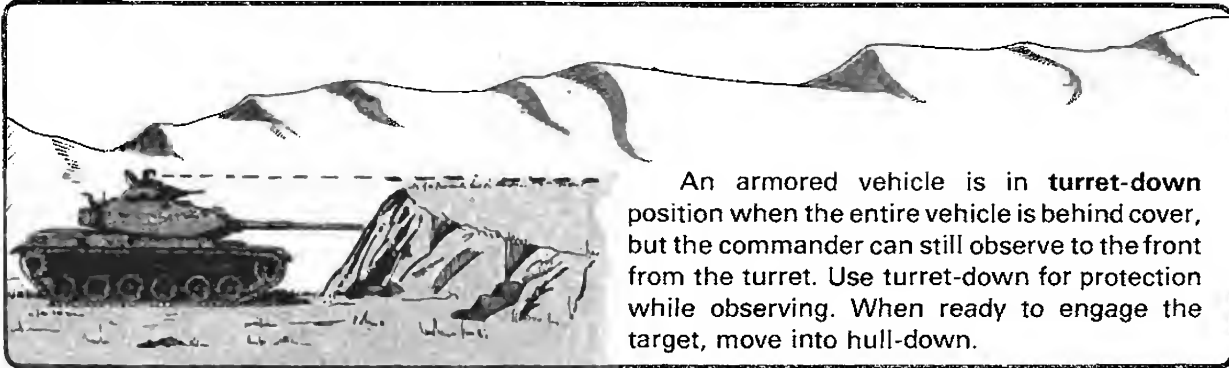
Conspicuous Landmarks. Conspicuous landmarks should be avoided, because they attract enemy attention. His artillery and antitank weapons will probably have been registered on them.

Movement From Cover, Concealment, or Defile. Lead vehicles of a unit or team emerging from a ravine, woods, or other defile should be overwatched by other vehicles, halted in concealed and/or covered positions and ready to provide suppressive fire.

Dusty Terrain. Dusty terrain betrays the movement of cavalry units. Dust can be minimized by slow movement and dispersion. Vehicle tracking should be avoided.



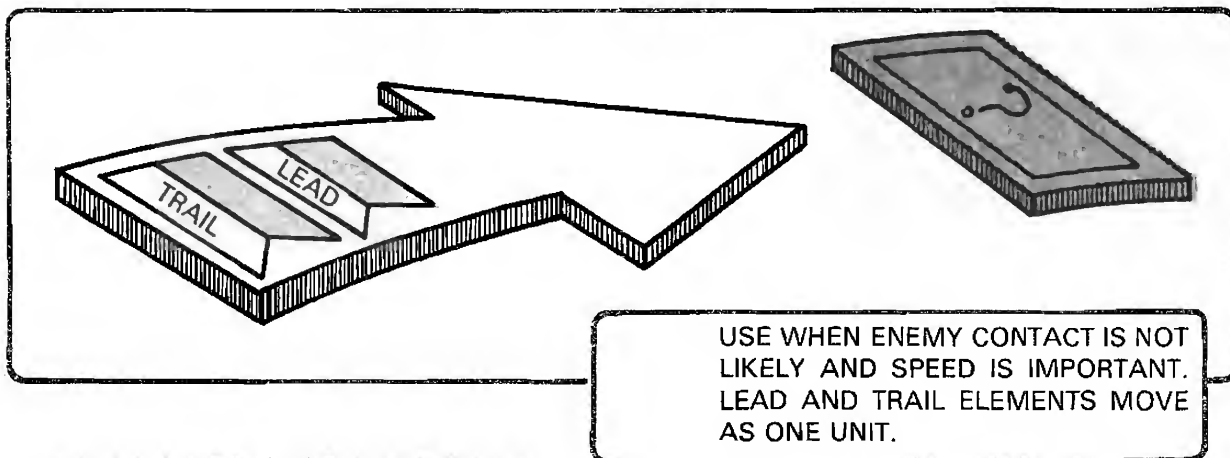
Vehicle Positions. Positions behind cover are known as either *down* positions or *hide* positions, depending on how much of the vehicle is protected from enemy fire.



TRAVELING

In this technique, the lead and trail elements of a unit move together as a unit. It is the fastest but least secure movement technique, and is used when speed is important and enemy contact is not likely. Move-

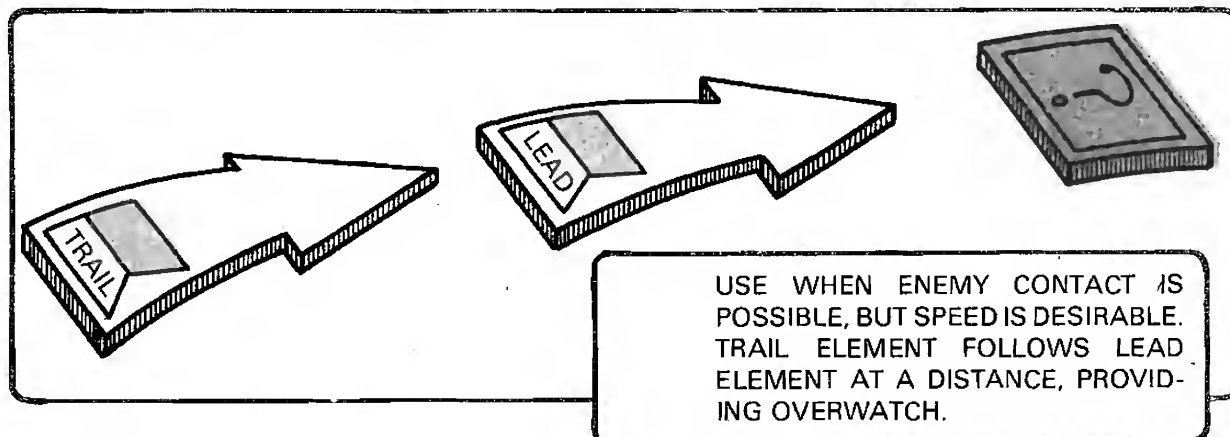
ment is continuous, and interval and dispersion are maintained between vehicles as terrain and administrative restrictions permit.



TRAVELING OVERWATCH

In this technique, the lead and trail elements of a unit again move together, but distance separates the lead and trail elements to improve security. Traveling overwatch is used when contact is possible, but speed is desirable. The lead element moves continually along the most covered and concealed routes for protection from possible enemy observation and direct fire. The trail element

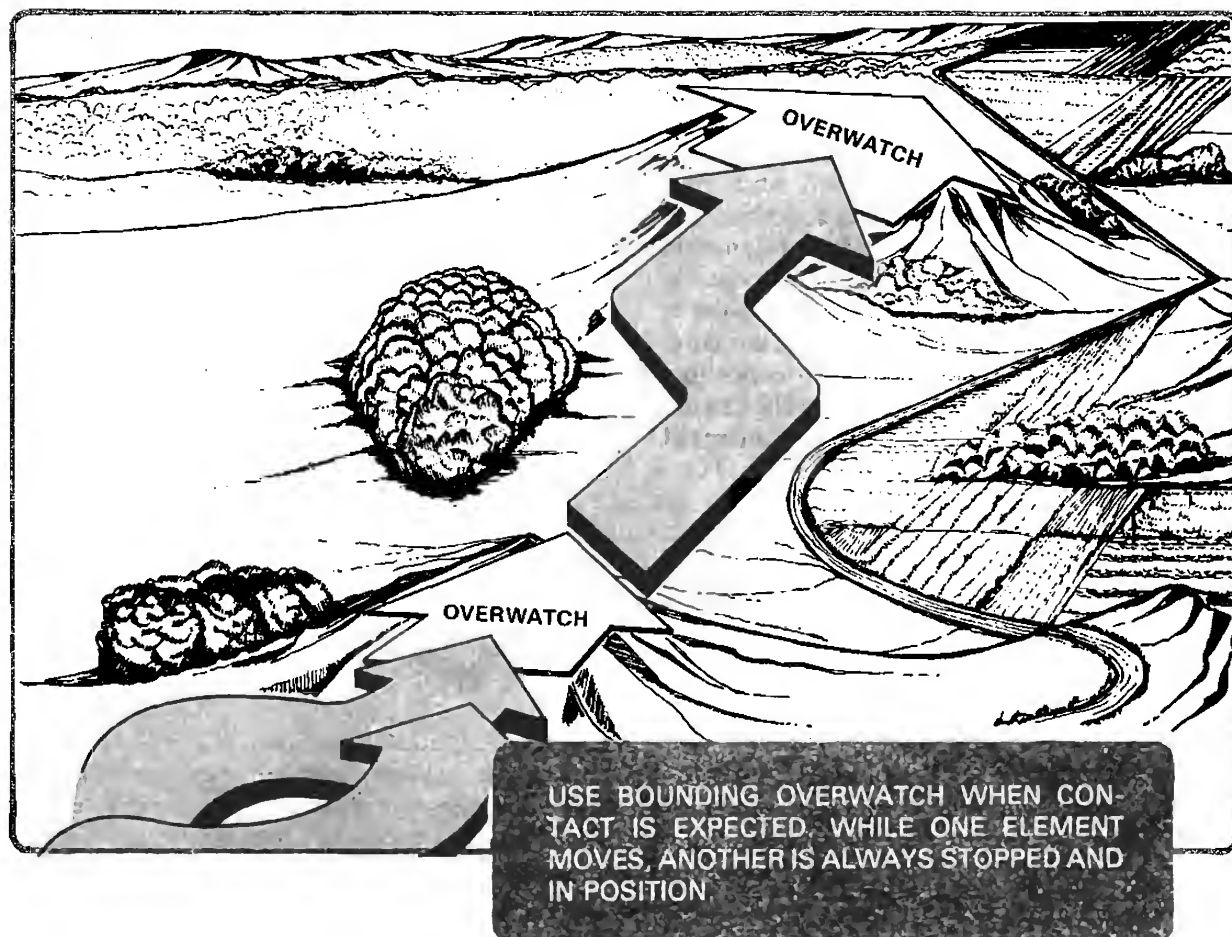
moves at variable speeds, continuously overwatching. The trail element must maintain visual contact with the lead element, staying close enough to provide suppressive fire and to maneuver for support, yet far enough to the rear that enemy direct fire engagement of the lead element does not prevent its delivery of suppressive fires or interfere with its maneuverability.



BOUNDING OVERWATCH

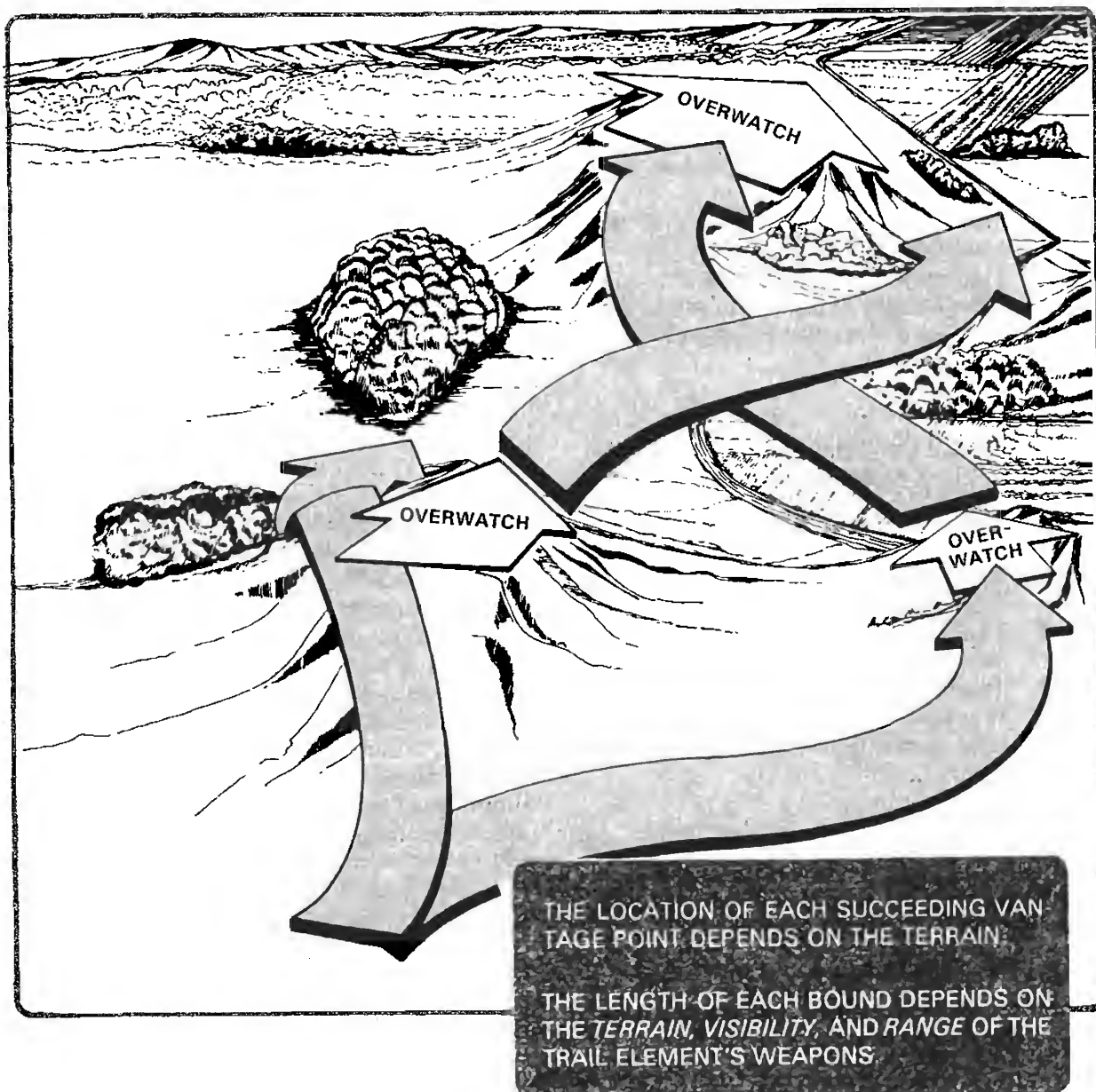
The unit moves by bounds in this technique, with a trailing element always in a position to overwatch the advance of the leading element. It is the slowest, but most secure movement technique, providing the capability for immediate, direct suppressive fire on an enemy force that engages the bounding element with direct fire. This technique is used when enemy contact is expected.

In bounding overwatch, the lead element of the unit advances to a point (first move) where it can support the advance of the rear element. On signal, the rear element moves rapidly forward to a position abreast of the leading element (second move) and halts to overwatch the next advance of the lead element (third move). Maximum use is made of folds of the earth and concealment to mask movement from likely enemy positions.



Variation. A variation of this technique may be used. The lead element moves to the next vantage point (first move), overwatched by the trail element. After the lead element has taken a position, the trail

element advances past the lead element to a new vantage point (second move). The initial lead element then advances past the initial trail element to a new position (third move). Movement is continued until contact is made.



Orders. Before moving his unit, the leader selects the initial position for the overwatch element, the next vantage point, and the best covered and concealed route that will permit accomplishment of the mission. He issues orders to the leaders of the overwatch and bounding elements. There is always a danger that orders will be misunderstood; therefore, orders must be clear and complete.

THE LEADER OF THE OVERWATCH ELEMENT MUST KNOW:

- The direction of the Threat elements.
- The location of his overwatch position.
- The route and destination of the bounding element.
- The location of his leader.
- What he can expect to do next.
- How he will receive his orders.

THE LEADER OF THE BOUNDING ELEMENT MUST KNOW:

- The direction of the Threat elements.
- Where he is to move and by which route.
- Which movement technique to use.
- The location of the overwatch element.
- The location of his leader.
- What he can expect to do next.
- How he will receive his orders.

Overwatch Position. The overwatch position is a key to the bounding overwatch technique, offering the advantages usually associated with the defense, including:

- Good observation and fields of fire.
- Protection offered by covered and concealed positions.

- Immediate and controlled reaction to any threat.
- Stationary weapons platform.

Overwatch Element Leader. The leader of the overwatch element moves his vehicles over covered and concealed routes to hulldown positions and:

- Checks the overall security of the position.
- Assigns areas of responsibility for observation and fire.
- Reports occupation of the position.
- Searches for and engages known or likely targets that could endanger the moving element.
- Selects route(s) to his next position.

NIGHT MOVEMENT

Movement techniques at night, or during periods of poor visibility, are the same for those used during periods of good visibility, but it is harder to navigate and maintain control. Movement under conditions of poor visibility is facilitated by detailed coordination, careful selection of routes, and the use of night vision equipment and battlefield illumination. When illuminating the battlefield, the locations of friendly units must not be illuminated or silhouetted. Maximum use should be made of passive devices, and the use of active devices must be controlled to maintain surprise and hide friendly locations. Movement should be keyed to easily recognizable terrain features, such as roads, fences, tree and pole lines, edges of woods, and streams. Luminous markers should be placed on the rear of vehicles and personnel.

★ ARMORED CAVALRY

MOVEMENT TECHNIQUES AT PLATOON LEVEL AND BELOW

★ A cavalry platoon leader organizes his platoon to accomplish the mission based on his assessment of the enemy in his area, the terrain he must operate over, the men and equipment he has available, and the mission he must perform (chapter 3).

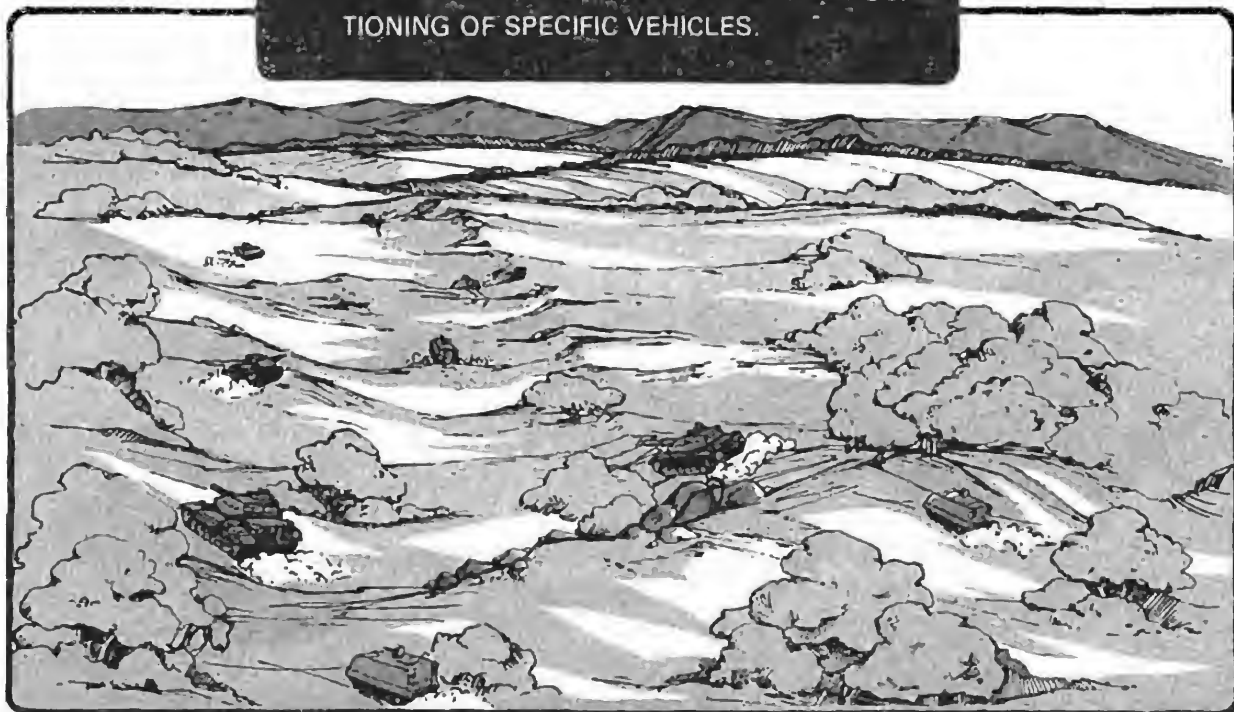
Traveling. The platoon leader designates the lead and trail teams and the route(s) that the platoon will use to accomplish the mission. The platoon is usually organized into two teams. For ease of control, the platoon leader moves in the lead vehicle of the

the lead team, while the platoon sergeant moves with the trail element.

The traveling technique is often used within a team. The team leader divides his team into a lead section and a trail section and designates the routes. The team moves as a unit, and the leader moves with the lead section.

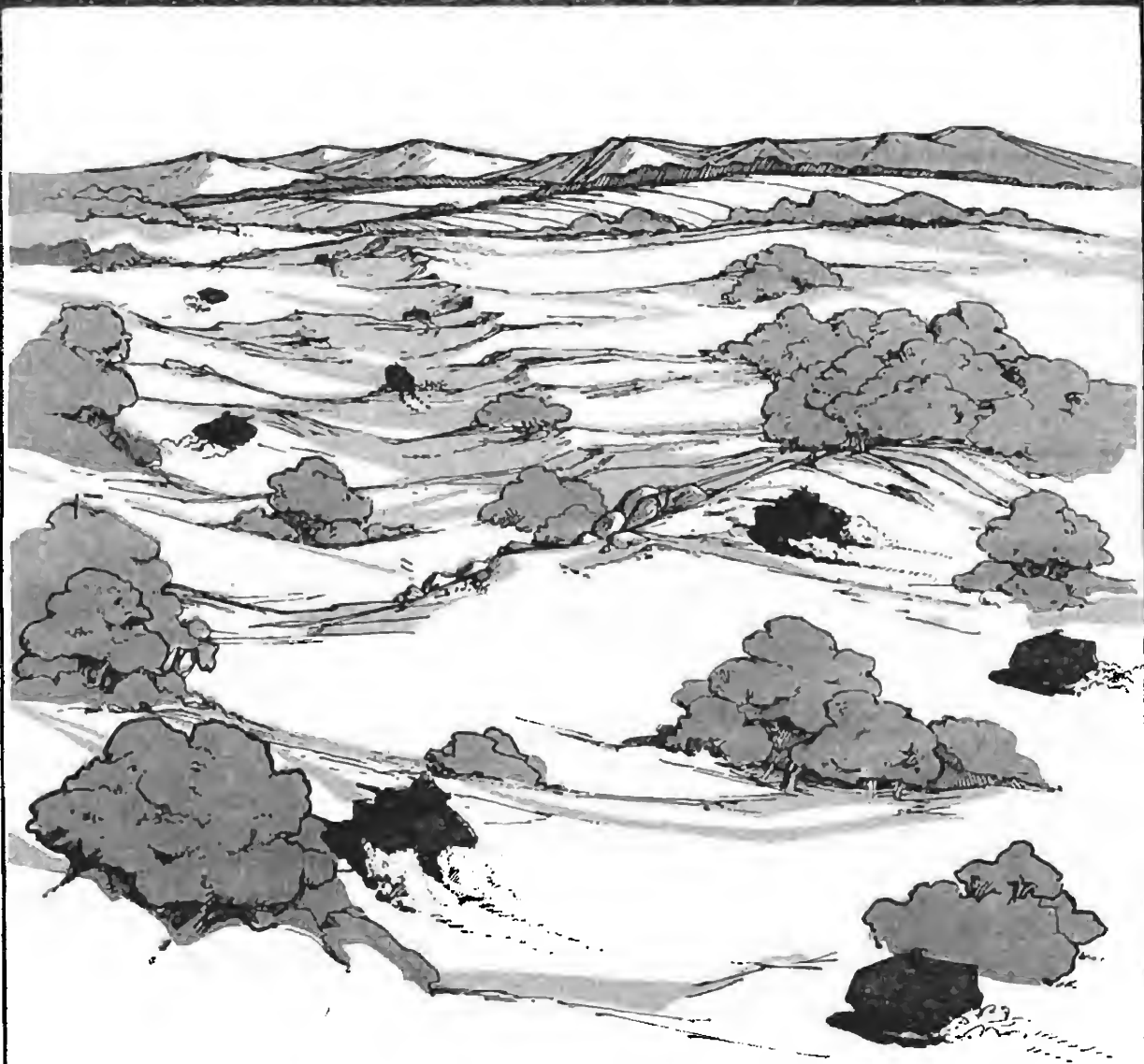
The same techniques are used within a section.

THE PLATOON LEADER DIRECTS THE POSITIONING OF SPECIFIC VEHICLES.



Traveling Overwatch. The platoon leader designates lead and trail teams and the route(s) that the platoon will follow to accomplish the mission. The lead team moves rapidly and continually, taking full advantage of cover and concealment. The trail team follows at a distance where it can provide suppressive fire or maneuver to support the lead in the event of contact with the enemy. Usually the platoon leader moves with the lead elements and the platoon sergeant moves with and controls the trail elements. Long range, direct-fire weapons are in the trail team.

TRAVELING OVERWATCH



Bounding Overwatch. A platoon may use bounding overwatch. One team takes an overwatch position while another bounds. Because of the wide frontages normal to cavalry operations, bounding overwatch is more often used within team and section. Regardless of the level, the leader designates the bounding and overwatch elements, the location of the overwatch position, and the route to and location of the next vantage point. For cavalry, this technique not only furnishes fire to cover the movement of lead vehicles, but helps locate enemy positions and ensures rapid transmission of information. A cardinal rule is to make contact with the smallest possible element. For example, it is usually preferable to lead with one vehicle instead of two or three. The following considerations apply to this movement technique:

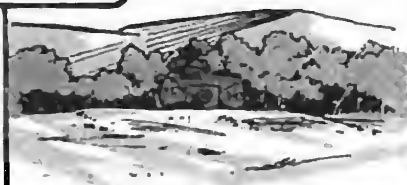
Vehicles in overwatch should occupy hull-down positions and make maximum use of cover and concealment.



SIDE VIEW
HULL-DOWN
POSITION



FRONT VIEW
HULL-DOWN
POSITION



BACKGROUND
IMPROVES
POSITION

The overwatch element must look for likely enemy positions, so it can readily detect and engage enemy forces.



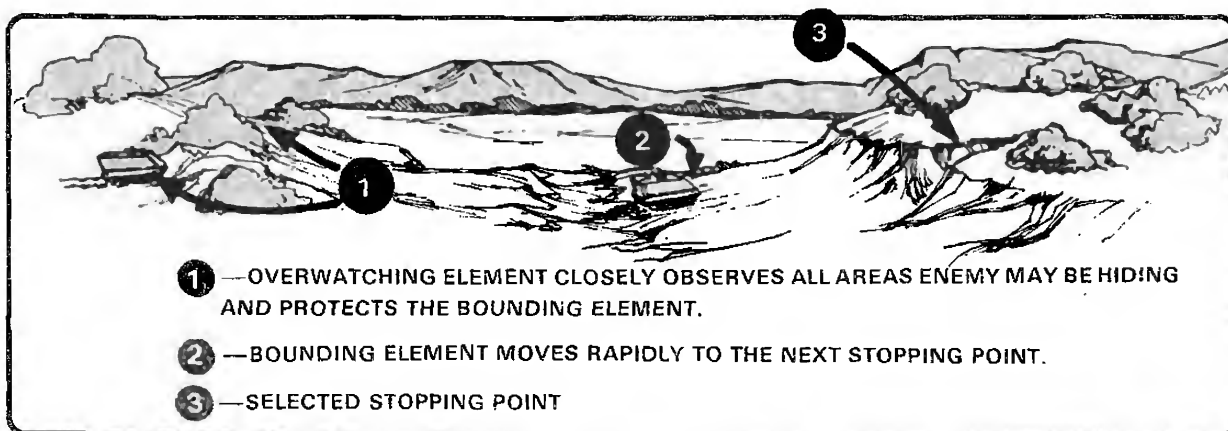
① — AT THE ENDS OF ROADS

② — ALONG WOODLINES AND WHERE WOODS GO OVER CREST

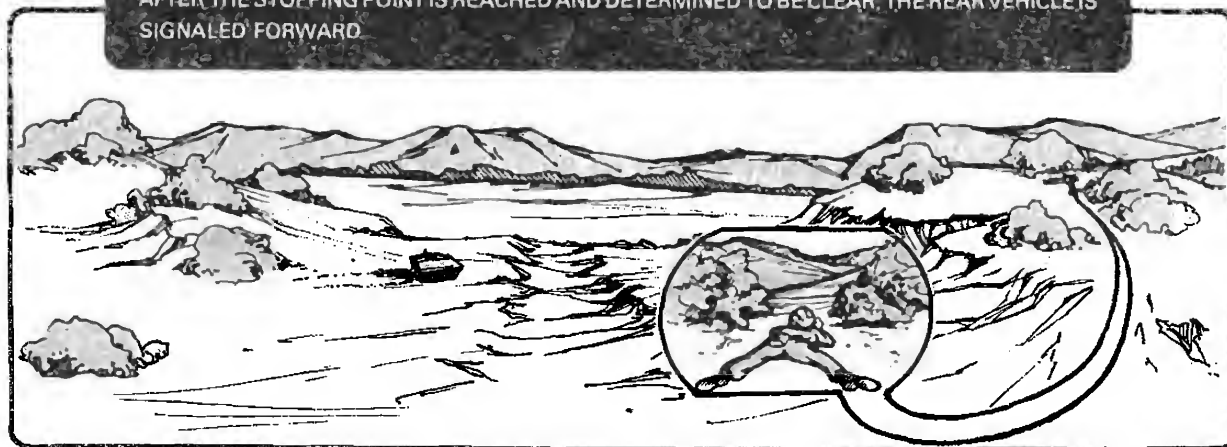
③ — IN BUILT-UP AREAS

The length of each bound is determined by terrain, visibility, and the range from which the overwatching element can effectively support the moving element. Bounds must be as rapid as security, efficiency of

operation, and coordination between elements allow. All elements must avoid skylining, and must cross open areas rapidly. Crews must be alert for the enemy and prepared to implement actions on contact.



AFTER THE STOPPING POINT IS REACHED AND DETERMINED TO BE CLEAR, THE REAR VEHICLE IS SIGNALLED FORWARD.



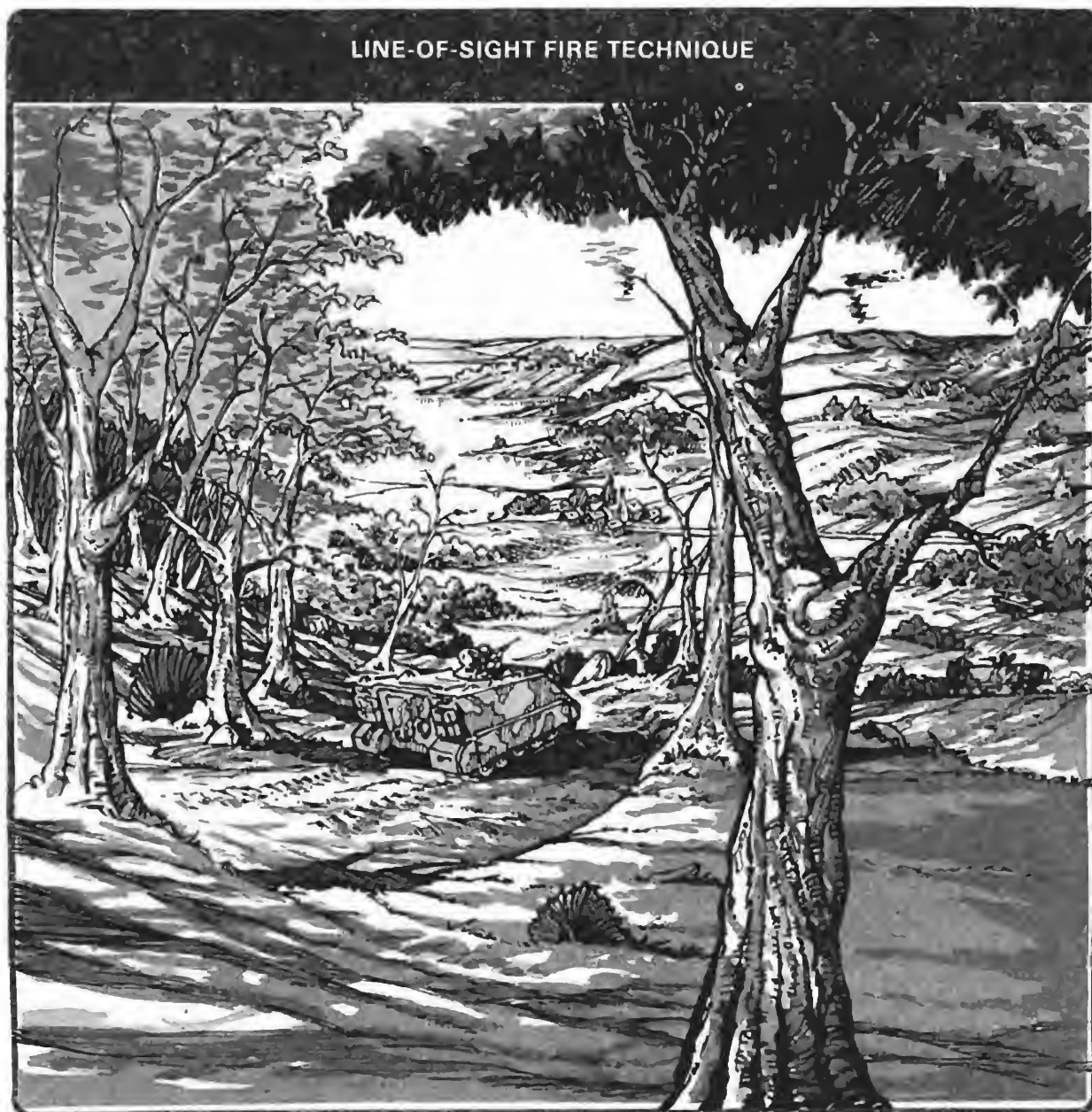
Scouts must not become vehicle-bound. When the lead vehicle nears a position with new areas of observation (the edge of a wooded area or a rise in the ground), it should be stopped in a covered and concealed position while a dismounted check is made for enemy elements. The fundamentals of individual movement discussed in FM 21-75 apply. If the commander and observer move forward dismounted, the driver mans the

cupola mounted weapon, monitors the radio, and covers their advance.

When the lead vehicle arrives at the selected stopping point, a dismounted reconnaissance is made of the area to the front. The lead commander keeps his vehicle concealed until he has signaled the rear vehicle forward and the next bound has been determined.

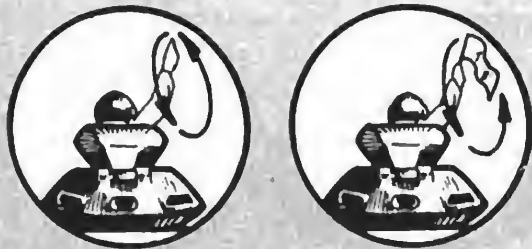
When used with the platoon, the mortar squad follows the trail team. It locates far enough to the rear that the weapon can be fired at minimum range to support the lead teams. Positions should permit use of the line-of-sight fire technique to eliminate the need for a complete fire mission request and

permit rapid delivery of suppressive fires. The squad leader monitors the platoon net to keep up with the situation. He gives his status and location to the platoon leader so that the platoon leader can move him forward as required.

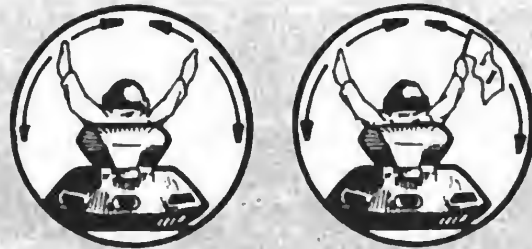


Control of Movement. As much as possible, movement is controlled by SOP, visual signals (arm, hand, or flag), or messenger. The platoon leader uses the radio as little as possible to control the movement of his platoon.

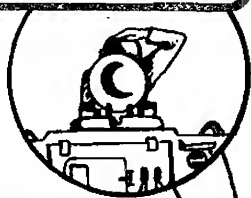
COMMAND:
TRAVEL



COMMAND:
TRAVEL OVERWATCH



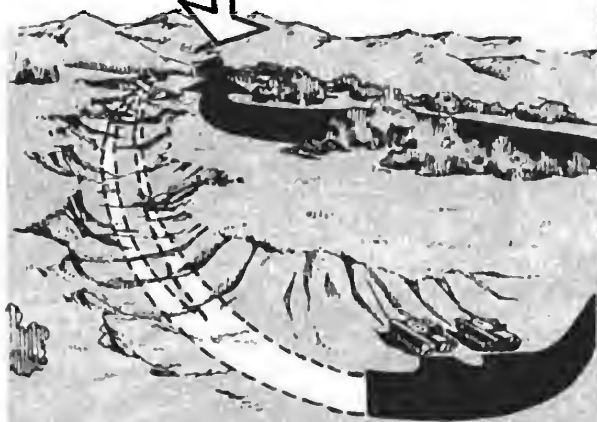
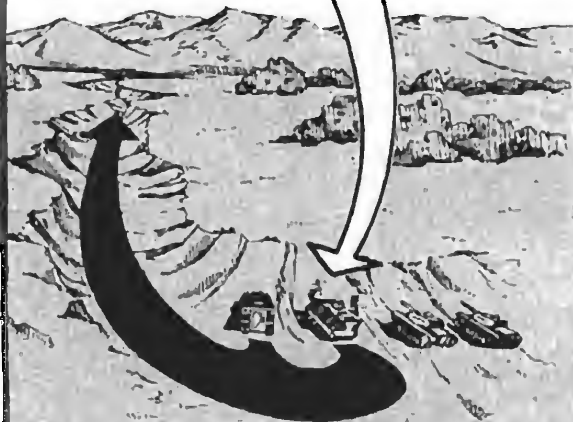
STEP 1 COMMAND:
COVER MY MOVE TO
CHECK POINT ONE
ZERO.



NO
FLAG
SIGNAL

STEP 2 COMMAND:
MOVE UP ON MY
RIGHT.

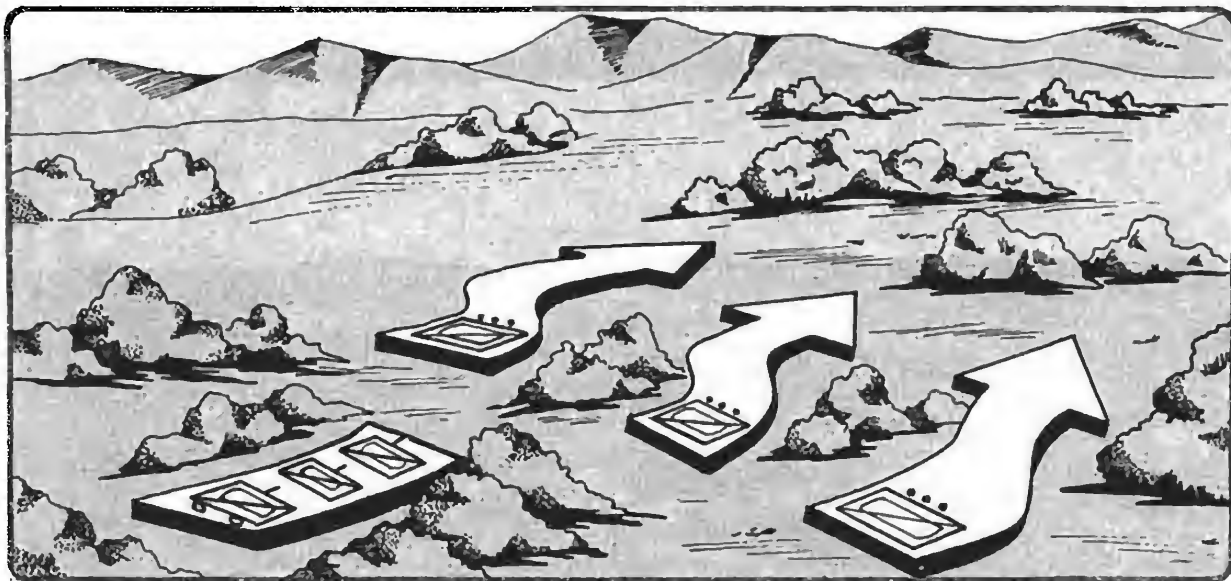
NO
ARM & HAND
SIGNAL



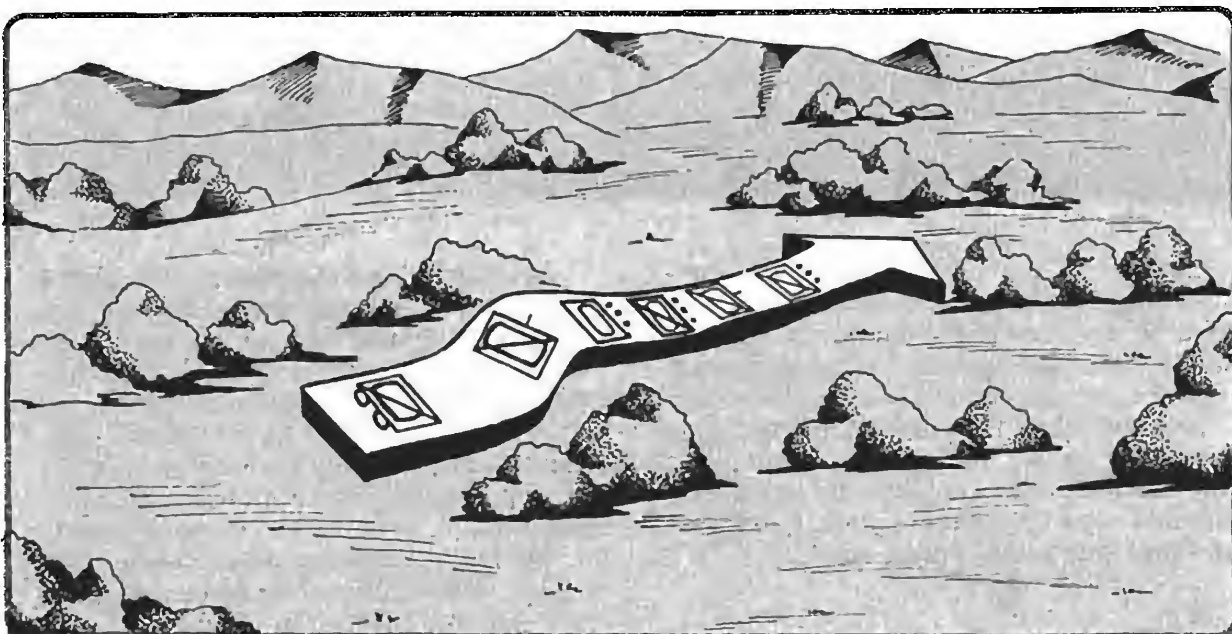
■ **Other Types of Platoon Organizations.** As outlined in chapter 3, there are variations in cavalry platoons. The above movement techniques apply no matter how the platoon is organized and equipped.

MOVEMENT TECHNIQUES ABOVE PLATOON LEVEL

Troop. During reconnaissance and most security operations, the troop usually moves on multiple axes with each platoon assigned its own route or zone of advance. Unless specified by the troop commander, each platoon leader selects the movement technique most appropriate for his situation and mission.



There will be times (an advance or flank guard operation) when the troop will have to move in a column of platoons. The lead platoon moves using the technique most appropriate for the situation. The troop (-) uses the traveling technique.



Regardless of the number of axes on which the troop is operating, mortars locate where they can best provide indirect fire to the lead platoon(s). They move by bounds to positions where they can quickly and effectively react to the anticipated enemy threat.

MORTARS ARE CONSOLIDATED UNLESS THEY CANNOT SUPPORT LEAD ELEMENTS.



The troop commander locates well forward to best exercise command control. Orders are usually given over the radio and monitored by all platoons. But the troop must be prepared to operate without the radio by using messengers, face-to-face coordination, and visual signals. A well trained troop uses standard reporting procedures (appendix B) to reduce long radio transmissions.

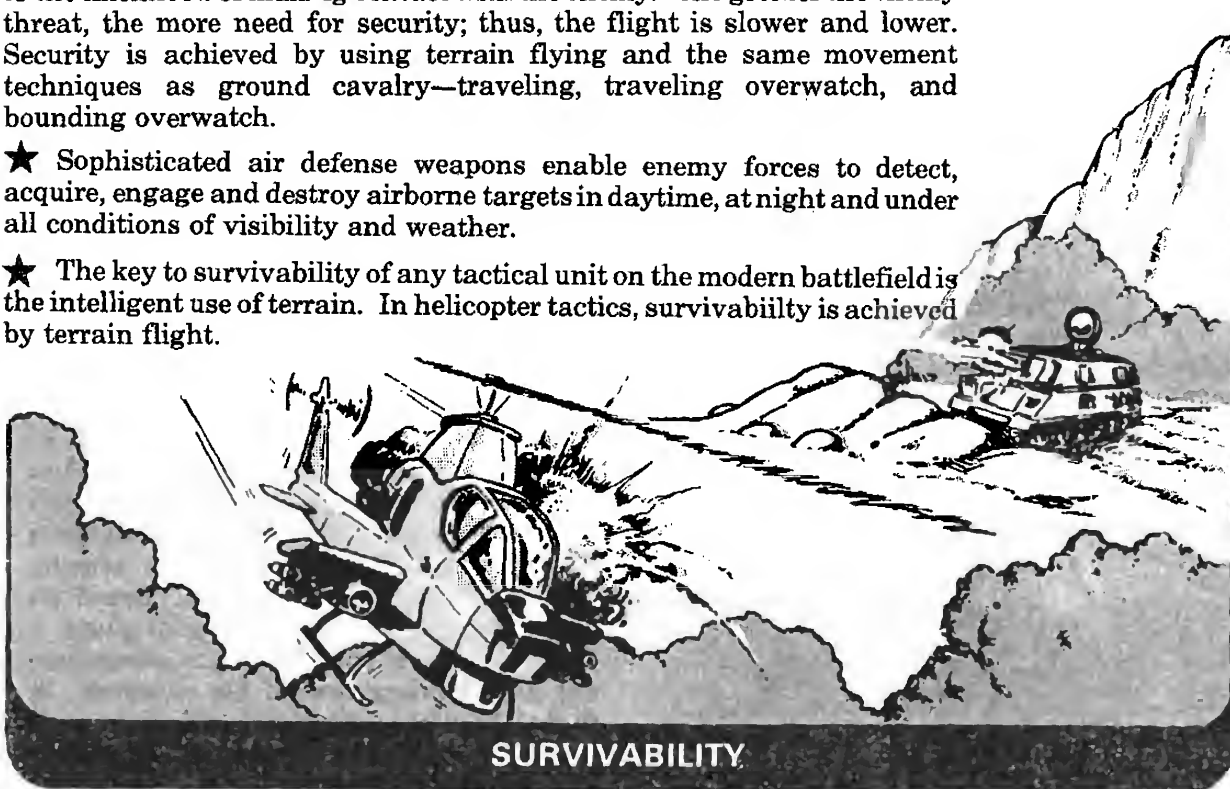
Squadron and Regiment. When the squadron and regiment move to gain contact, normal deployment is over multiple axes. Traveling, traveling overwatch, or bounding overwatch are used at the platoon level, no matter how the parent squadron and regiment are deployed. Movement techniques for the tank company of the regimental squadron are covered in FM 71-1. The howitzer battery in the regimental squadron displaces to support ground maneuver elements, using the techniques outlined in FM 6-50.

AIR CAVALRY

Air cavalry moves to gain contact using terrain and the same movement techniques as ground cavalry. Air cavalry is organized for combat into teams consisting of varying mixes of aircraft, depending on the mission and situation (chapter 3). Two factors differentiate aircraft from ground vehicles: *speed of movement* must be recognized and controlled, and *travel in the vertical plane* allows the aircraft to be silhouetted much more often than ground vehicles. Air cavalry teams adjust their air speed and altitude to the likelihood of making contact with the enemy. The greater the enemy threat, the more need for security; thus, the flight is slower and lower. Security is achieved by using terrain flying and the same movement techniques as ground cavalry—traveling, traveling overwatch, and bounding overwatch.

★ Sophisticated air defense weapons enable enemy forces to detect, acquire, engage and destroy airborne targets in daytime, at night and under all conditions of visibility and weather.

★ The key to survivability of any tactical unit on the modern battlefield is the intelligent use of terrain. In helicopter tactics, survivability is achieved by terrain flight.



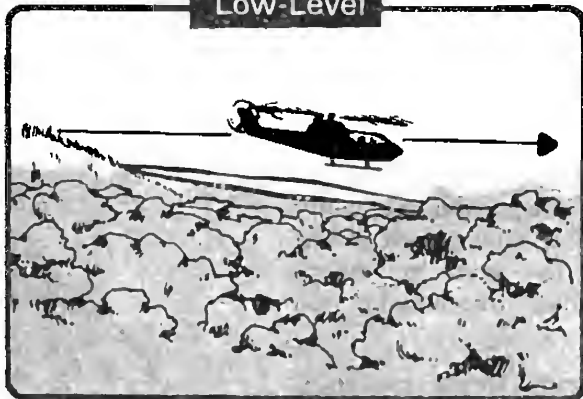
TERRAIN FLIGHT

★ Terrain flight, as its name implies, is nothing more than *reading* and *utilizing* the terrain to counter the enemy's attempt to defeat us.

★ Terrain flying is flight close to the earth's surface, using natural features (terrain and vegetation) and man-made objects to degrade the enemy's ability to acquire targets. Armor aviation units use a combination of three types of flight—low-level, contour, and nap-

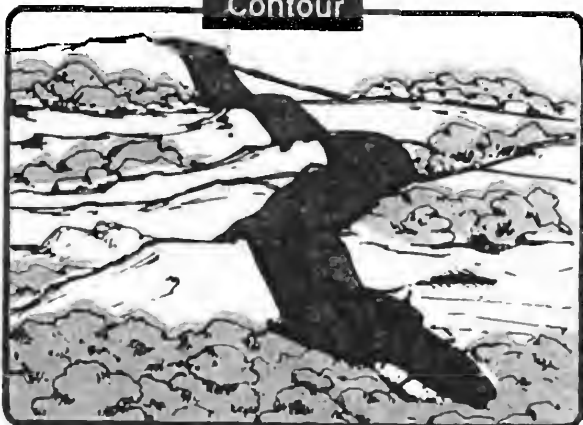
of-the-earth (NOE)—depending on terrain, mission, weather, and the enemy's ability to acquire targets. Air crews must develop the ability to analyze the Threat, their mission, and situation, and maneuver using the mode of flight required to accomplish the mission. It is not uncommon for scout/attack helicopter teams to maneuver in and around trees and under wires or bridges. Operations will also include the use of built-up areas for cover and concealment.

Low-Level



Low-Level. Low-level flight is flight conducted at a selected altitude at which detection of an aircraft or of its departure and landing points is minimized or avoided. The route is preselected and generally conforms to a straight line, constant air speed, and indicated altitude.

Contour



Contour. Contour flight is flight at an altitude which generally conforms to the contours of the earth. This type of flight takes advantage of available cover to avoid detection of the aircraft and/or its points of departure and landing. It is characterized by constant air speed and an altitude varying with vegetation and obstacles.

Nap-of-the-Earth (NOE)



Nap-of-the-Earth (NOE). NOE flight is flight as close to the earth's surface as vegetation or obstacles permit, generally following the contours of the earth. Air speed and altitude vary according to terrain, weather, and enemy situation. Based on known terrain features, the pilot plans a broad corridor of operation, with a longitudinal axis pointing toward his objective. In flight, the pilot uses a weaving, devious route within his planned corridor, remaining oriented along his general axis of movement to take full advantage of the cover of terrain, vegetation, and man-made features.

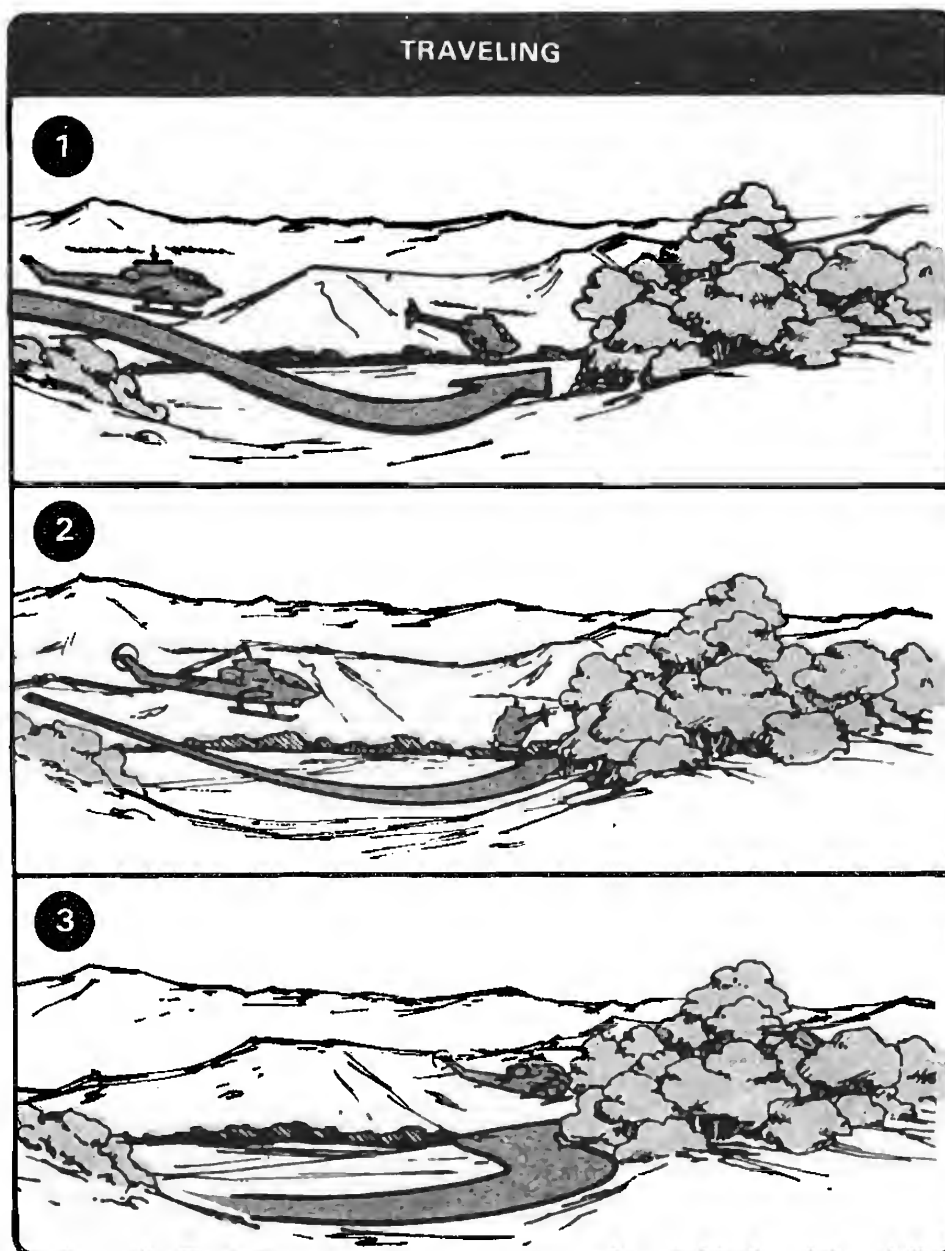
★ *Failure to make full protective use of terrain can prove fatal.*

★ Besides the use of terrain, the installation of Aircraft Survivability Equipment (ASE) enhances the success of our air cavalry and attack helicopter units against the enemy's modern air defense systems. When possible, Threat radar simulation should be played against the units during their gunnery training.

MOVEMENT TECHNIQUES

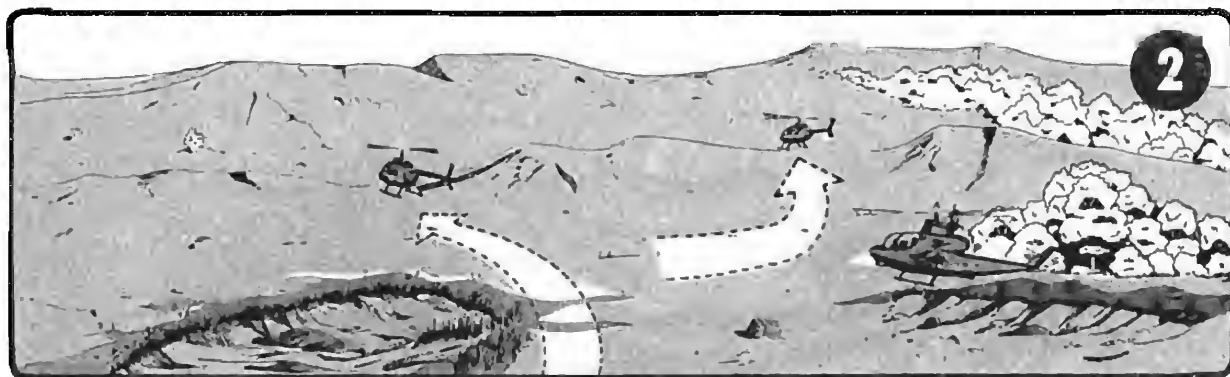
Traveling. The team moves at a constant speed, using low-level or contour flight. Within the team, aircraft are as dispersed as visual contact and terrain permit. This

technique is used for rapid movement when enemy contact is not likely. An air cavalry team applies this technique using the principles outlined on page 4-5.

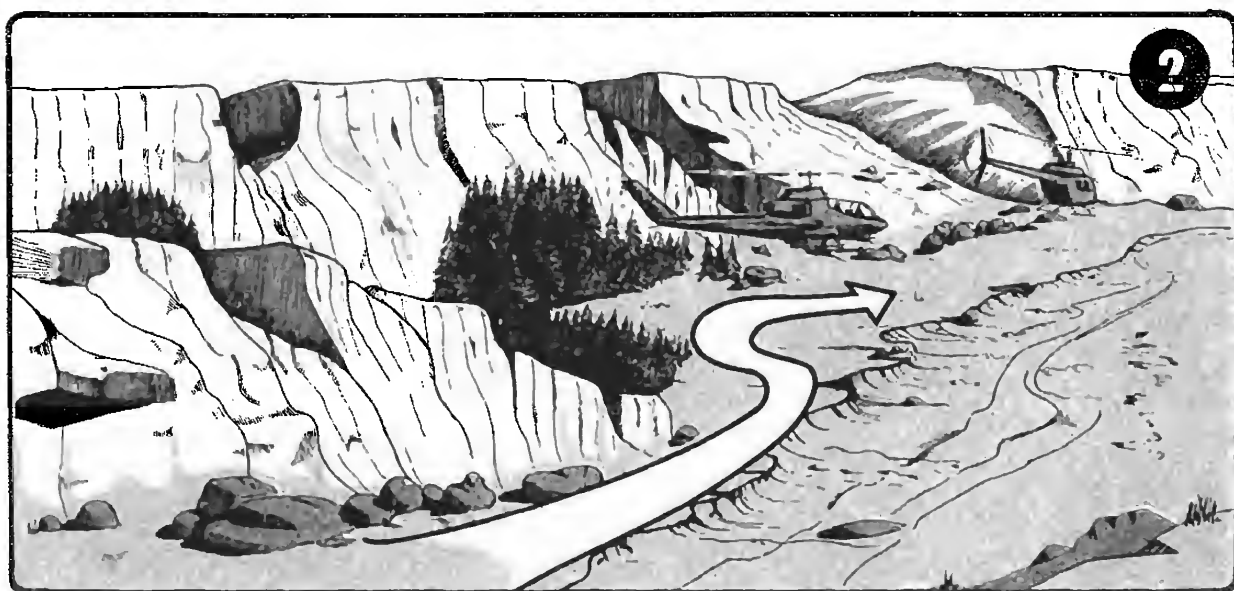
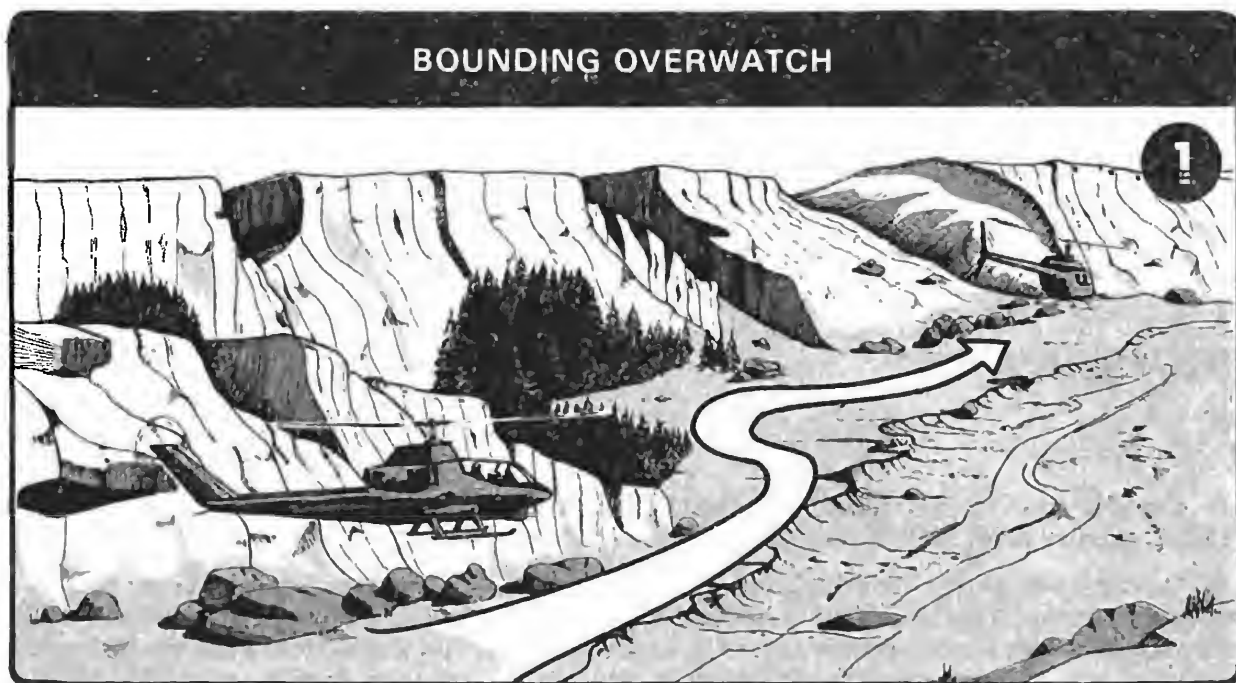


Traveling Overwatch. This is used when enemy contact is possible. Lead and trail aircraft are designated, and they move using the technique as described on page 4-5. The lead aircraft in the team moves continually. Trail aircraft move as necessary to overwatch the lead aircraft. Trail aircraft prepare to maneuver or provide suppressive fire to support the lead aircraft if it makes contact.

TRAVELING OVERWATCH



Bounding Overwatch. This is used when enemy contact is expected. The principles covered on pages 4-6 through 4-8 apply. Overwatch aircraft cover the progress of the bounding aircraft from a covered and concealed overwatch position. Overwatch aircraft are in position to support the bounding aircraft with immediate direct suppressive fire. The length of each bound is closely tied to terrain, visibility, and the range of the overwatch aircraft's weapon.



SUMMARY

Cavalry must MOVE on the battlefield in order to SEE the enemy first. Once the enemy is SEEN, cavalry must MOVE into position to accomplish its mission.

Cavalry selects the traveling, traveling overwatch, or bounding overwatch movement technique based on the likelihood of enemy contact. In the *traveling* technique, the lead and trail elements of a unit move together as a unit. In the *traveling overwatch* technique, the lead and trail elements of a unit again move together, but distance separates them to improve security. The unit moves by bounds in the *bounding overwatch* technique, with a trailing element always in position to overwatch the advance of the leading element.

Air cavalry uses the same movement techniques as ground cavalry to gain contact.

RECONNAISSANCE

The purpose of reconnaissance is to gather information upon which commanders may base plans, decisions, and orders. Reconnaissance includes surveillance; that is, systematic observation by any means.

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Why. *Cavalry conducts reconnaissance to see the battlefield and the enemy in order to reduce the uncertainties of the battlefield, such as terrain, effects of weather upon the terrain, and presence or absence of the enemy. The intent is to prevent the main body from entering battle unwarned, with an incomplete picture of the battlefield, or with tank and infantry striking power dissipated for reconnaissance or security tasks.*

When. *Cavalry conducts reconnais-*

sance as part of all cavalry operations and to develop a situation for the main body. Reconnaissance is continuous on the battlefield.

How. *There are three types of reconnaissance: route, zone, and area. It may be conducted as a distinct mission or as part of another operation. Cavalry reconnoiters at a distance that provides the main body adequate reaction time.*

FUNDAMENTALS

Cavalry performs reconnaissance mounted, dismounted, or a combination of mounted and dismounted. The last is most frequent. When possible, air and ground cavalry are used together. This permits the strengths of one to compensate for the weaknesses of the other and increases the tempo of operations. *Cavalry conducts reconnaissance according to five fundamentals:*

- Orient on the location or movement of the reconnaissance objective.
- Report all information rapidly and accurately.
- Retain freedom to maneuver.
- Gain and maintain enemy contact.
- Develop the situation rapidly.

Orient on the Location or Movement of the Reconnaissance Objective. Reconnoitering cavalry maneuvers according to the location or movement of the reconnaissance objective which may be a

terrain feature, a locality, or an enemy force. Thus, reconnoitering cavalry must have considerable freedom of action.

Report All Information Rapidly and Accurately. Information appearing unimportant may be very valuable in conjunction with other information. Knowing the enemy is *not* in one location is just as important as knowing he *is* in another. Reconnaissance reports must be timely and describe what (including how many), when, where, and doing what. A standard format facilitates rapid and accurate reporting (appendix B, Records and Reports).

Retain Freedom to Maneuver. Cavalry must *move* to live. Cavalry obtains information by stealth when possible, but fights as necessary to accomplish the mission. Overwatch, immediate suppressive fires, cunning, and maintaining an awareness of tactical situations to the flanks help prevent situations in which the ability to move is lost.

Gain and Maintain Enemy Contact.

Contact reduces the enemy's capability to achieve surprise. Using movement techniques discussed in chapter 4, cavalry must gain enemy contact quickly. Sometimes surveillance alone is sufficient; at other times, fire and maneuver are required. Contact is not voluntarily broken without orders.

Develop the Situation Rapidly. When contact is expected, reconnoitering cavalry deploys. They move by bounding overwatch, and are ready for battle. Immediately on gaining enemy contact, cavalry deploys to

cover, maintains observation, and reports the situation.

If the enemy does not detect the initial contact, reconnoitering cavalry continues observation until:

- Detected.
- The mission is accomplished.
- Further development of the situation requires combat action.
- The need for speed dictates sacrificing stealth.

The enemy's strength, composition, and disposition must be quickly determined with a special effort to find his flanks. This can be done by:

- Deploying unengaged elements forward to the flanks to extend the line of contact.

- Using patrols to reconnoiter to the flanks while the force in contact maintains a heavy volume of suppressive fire.

If first contact results in an exchange of fire, overwatch elements lay down a heavy volume of direct suppressive fire and indirect fires are requested, as necessary. The bound-

ing elements (normally the first to be engaged) return fire while seeking cover. The situation is reported and developed by fire and maneuver.

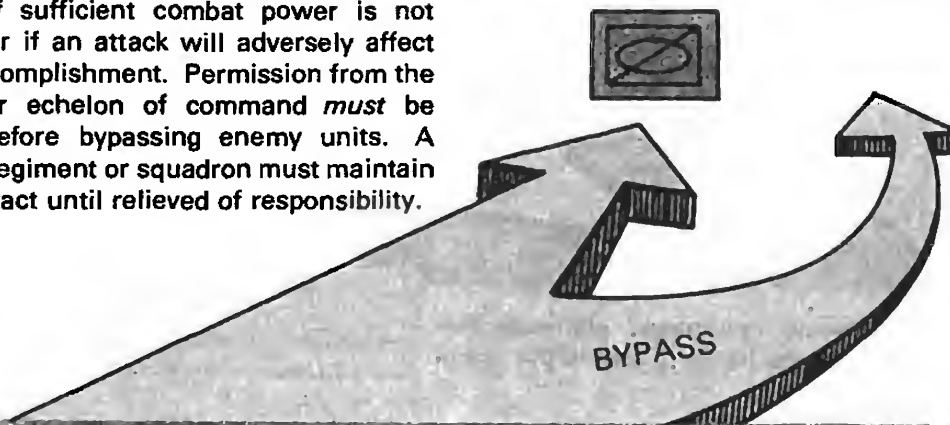
After the situation is developed, the unit chooses a course of action and reports. This ensures the commander's approval and

provides him information needed to develop his course of action. Possible courses of action are:

ATTACK, if sufficient combat power is available, and it will not detract from mission accomplishment. Adopting this course of action results in a hasty attack (chapter 6).



BYPASS, if sufficient combat power is not available, or if an attack will adversely affect mission accomplishment. Permission from the next higher echelon of command *must* be obtained before bypassing enemy units. A bypassing regiment or squadron must maintain enemy contact until relieved of responsibility.



MAINTAIN ENEMY CONTACT, if an attack will degrade mission accomplishment, or if there is not sufficient combat power to attack and bypassing is not feasible.



When an obstacle is encountered, the sequence of events is the same as on enemy contact. Obstacles may be man-made, such as a minefield; or a terrain feature, such as a marsh. *Obstacles are frequently covered by fire.* Immediately upon encountering an obstacle, the unit deploys to cover, reports,

and develops the situation through observation and patrolling to determine:

- If the obstacle is defended.
- Extent of obstacle.
- Feasibility of bypassing or reducing the obstacle.

RECONNAISSANCE TECHNIQUES

Reconnaissance is accomplished by a combination of mounted and dismounted actions.

Cavalry may dismount to:

- Acquire more detail than can be obtained while mounted.
- Achieve greater stealth.
- Reconnoiter possible ambush sites, such as a town, bridge, defile, or bend in a road. Cavalry determines if the enemy is lying in wait. A minimum of two scouts with a light machinegun should be dismounted. This permits one scout to overwatch the other during movement to the point of interest. It also permits one scout to maintain surveillance while the other acts as a messenger. The machinegun provides a means of immediately covering the bounding scout with a high volume of suppressive fire in the event he is fired on. At such times, if possible, vehicles are left in overwatch positions with each driver manning his vehicle's weapon and monitoring the radio. *Whenever possible, dismounted scouts are covered by overwatching fire and observation between themselves.* A vehicle moving behind dismounted elements destroys stealth.

Reconnaissance can be best conducted by combining the efforts of both air and ground cavalry elements. Air cavalry can greatly reduce the time needed to reconnoiter. In a reconnaissance mission, an air cavalry troop may be placed to the front, the flanks, or between ground units. The air cavalry troop

may have a route, zone, or area reconnaissance mission. Ground cavalry may reinforce the air cavalry if the terrain offers concealment from aerial observation. During route reconnaissance, air cavalry normally checks lateral routes and the terrain near the designated route(s). Ground cavalry in turn follows on the main route and reconnoiters those lateral routes or terrain features that can't be reconnoitered properly by air cavalry.

During a zone reconnaissance, air cavalry can increase the speed of operations by screening forward of the leading ground element until enemy contact is made. Air cavalry elements screening forward of ground cavalry must maintain communications with leading ground cavalry elements and give early warning of enemy positions and obstacles. Once enemy contact is made, air cavalry can reconnoiter and give security to the flanks, maintain contact between ground cavalry units, or develop the situation with long range, overwatching direct fires from attack helicopters.

During an area reconnaissance, the same considerations as for a zone reconnaissance apply. Due to air cavalry's mobility differential, it can react rapidly to a developing situation. Thus, during a reconnaissance mission conducted by the parent unit, the air cavalry mission may often change. The distance air cavalry operates from ground units normally depends on:

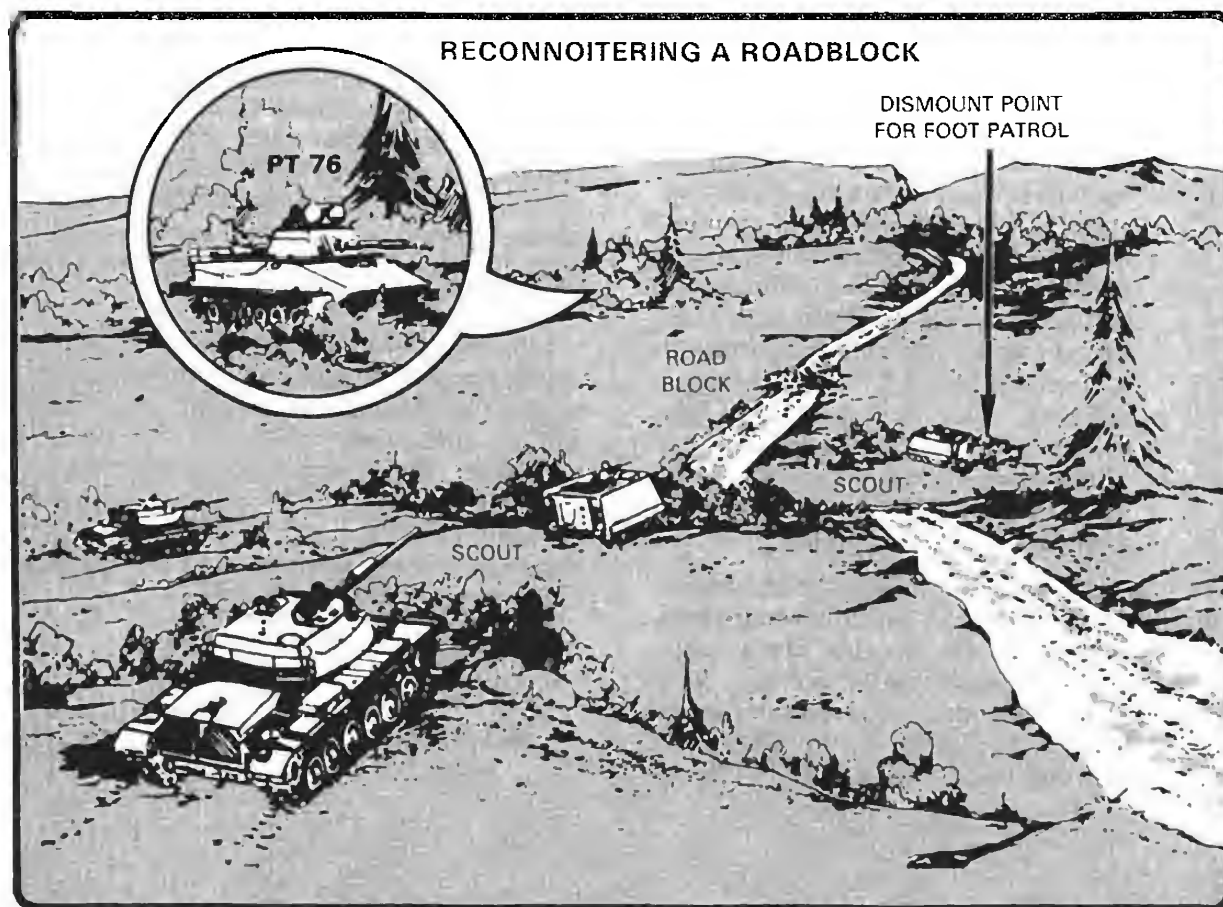
- Desire of the commander.
- Communications.
- Range fan of the supporting artillery.

Reconnoitering a Roadblock (The same general procedure is used for most obstacles encountered). Assume any roadblock/obstacle is observed and covered by fire. It will usually be positioned so the lead vehicle comes upon it suddenly. The platoon leader does not allow a team to develop the situation unsupported, but has them observe and reconnoiter further while the rest of the platoon is brought into the action.

Immediately upon observing the obstacle, the scouts deploy and report. If the enemy fires on the lead scout, the overwatch scout and the team's tanks fire suppressive fires while the lead scout deploys. To ascertain the enemy situation, the platoon leader moves the platoon to a position covering the obstacle. The platoon observes and searches the

obstacle for enemy dispositions, a route to bypass the obstacle, and if necessary, terrain over which to attack the enemy.

If no avenue of approach is available for bypass or enemy strength is too great for a platoon attack, the platoon leader sends a detailed report to the troop commander, keeps the roadblock under observation, determines the exact enemy location and size, and locates a bypass. If the obstacle is not under observation, or the patrols find the enemy has withdrawn, the platoon secures the area and the scouts determine if the roadblock can be effectively removed. Once the enemy situation has been developed, and a bypass found, the platoon leader informs the troop commander.



Conducting a Reconnaissance Over Semi-Open Rolling Terrain. The tanks are placed in an overwatch position where they can observe the terrain well forward and to the flanks of the scout squads. The scouts then move by bounding overwatch over the terrain. The bounding vehicle does a complete visual reconnaissance of the terrain and his route to the next position. Meanwhile, the overwatch scout observes the terrain forward and to the flanks of the bounding vehicle. The overwatch scout knows the bounding vehicle's tentative route and stop point. He is ready to provide rapid suppressive fire with his machinegun in support of the bounding scout.

The situation will dictate which scout vehicle will bound first. Because of the slow response and flight time of the TOW, the assistant squad leader overwatches within machinegun range. If the enemy is too strong to be suppressed by the ITV's machinegun (7.62-mm only), the tanks are brought into action.

The platoon leader must ensure his reconnaissance plan covers the entire zone, because very seldom will one team have visual contact with the other due to distance, vegetation, and terrain.

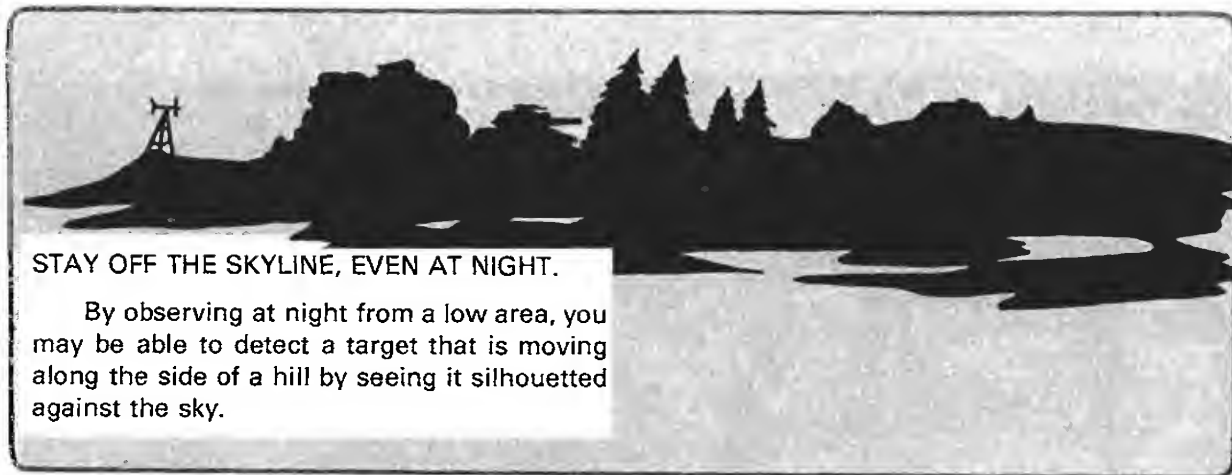


RECONNAISSANCE AT NIGHT AND DURING OTHER PERIODS OF REDUCED VISIBILITY

Air and ground cavalry reconnoiter at night the same as during the day. However, the rate of coverage decreases significantly. This is due to increased difficulty in navigation, reduced effectiveness of visual observation, and during sustained operations, the human endurance factor. As a general rule, routes can be reconnoitered at night as in the day, although not as quickly. In the case of zone reconnaissance, zones should be narrowed since command control can be more difficult at night. When it is necessary to perform area reconnaissance at night or

during other periods of reduced visibility, more time should be allowed to accomplish the mission.

Illumination, passive night vision devices, surveillance radars, and other STANO devices will, to a large degree, offset the problems of darkness (FM 31-1 and FM 31-100). Since the enemy has a comparable capability and places great emphasis on operations during periods of limited visibility, moving cavalry must use the terrain at night as it does during daylight hours.



When illumination is used, it is placed *behind* the enemy to silhouette him. Cavalry does not locate near burning vehicles or houses.

When bad weather or heavy fog sets in, primary reliance must be placed on ground elements. These periods can be used to rest flight crews and for a surge in the aircraft maintenance effort.

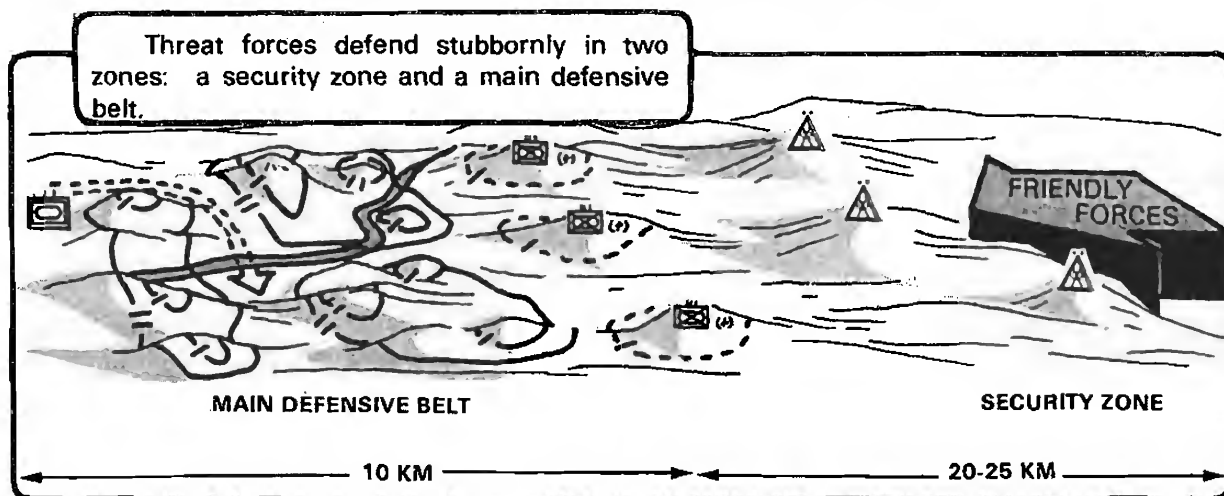
At night or during other periods of reduced visibility, ground cavalry depends on dismounted scouting and patrolling to prevent unnecessary vehicle losses. The loca-

tion of moving vehicles is particularly easy to pinpoint by sound at night and in fog.

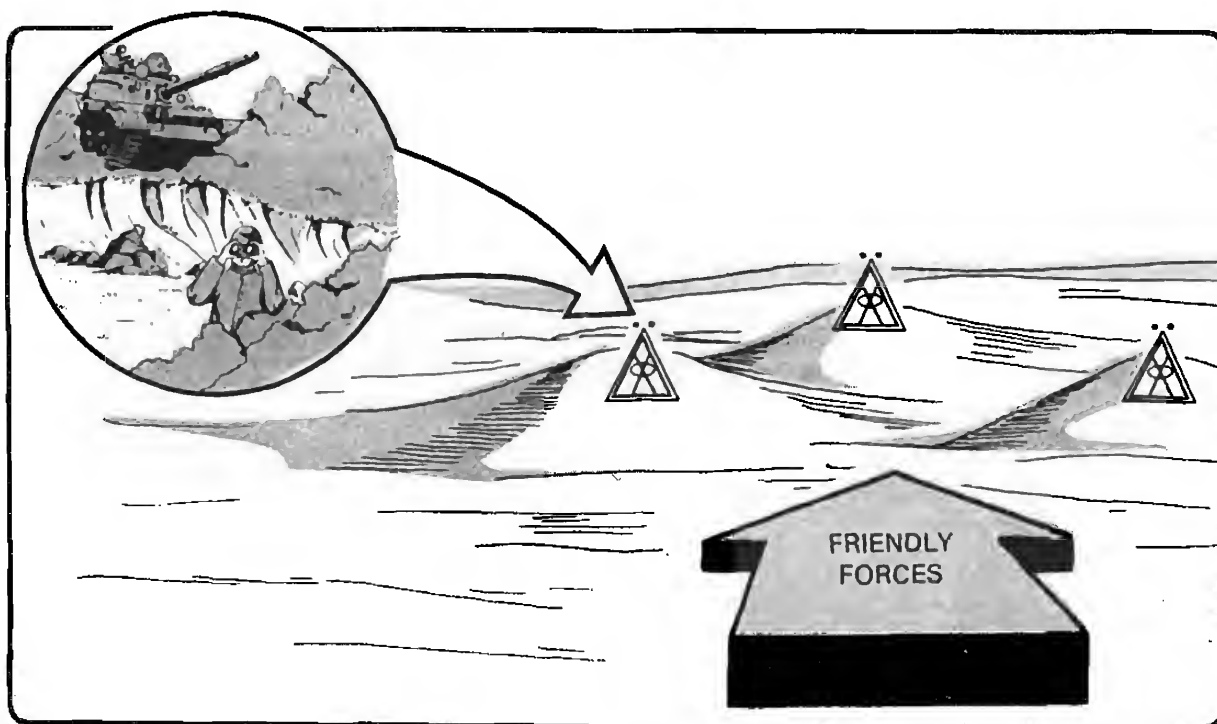
Reconnaissance during periods of reduced visibility requires significantly higher levels of individual and unit proficiency. Since skill rapidly deteriorates without frequent practice, monthly operations are required. About half of all reconnaissance training should be at night. During combat, a completely committed cavalry unit may start losing efficiency after about 36 hours of continuous operation. One hour of night flying causes fatigue comparable to 5 or 6 hours of daylight flying.

THREAT ORGANIZATION FOR DEFENSE

Reconnoitering cavalry may find the enemy deployed for defense and conducting reconnaissance and security operations. Threat forces view defense as a temporary expedient emphasizing depth, strongpoints, and tank-led counterattacks. The following shows how a motorized rifle regiment organizes and defends its part of a battle area.



Security Zone. US cavalry units first encounter the security zone about 20-25km forward of the main defensive belt. It is occupied by Threat reconnaissance units.



Threat Weapons. Threat reconnaissance units are equipped with PT-76 tanks, BRDM scout and reconnaissance vehicles, motorcycles, and SA-7 shoulder-fired air defense missiles. They are supported by artillery, mortar, and close air support fires.

Threat Tactics. Threat reconnaissance units conduct mounted and dismounted squad- and platoon-size patrols throughout this zone. Their mission is to locate advancing US cavalry and main body forces.

These patrols attempt to:

- Provide early warning.
- Establish and maintain contact.
- Obtain information about the attacking forces.
- Prevent US cavalry from gaining information.

- Delay with long range direct and indirect fires.
- Deceive and harass.
- Avoid decisive combat.

Threat reconnaissance units may be reinforced with tank and motorized rifle platoons from units in the main defensive zone. These reinforcements normally occupy individual strong points positioned throughout the security zone to:

- Assist Threat reconnaissance units.
- Channel advancing US cavalry into killing zones.

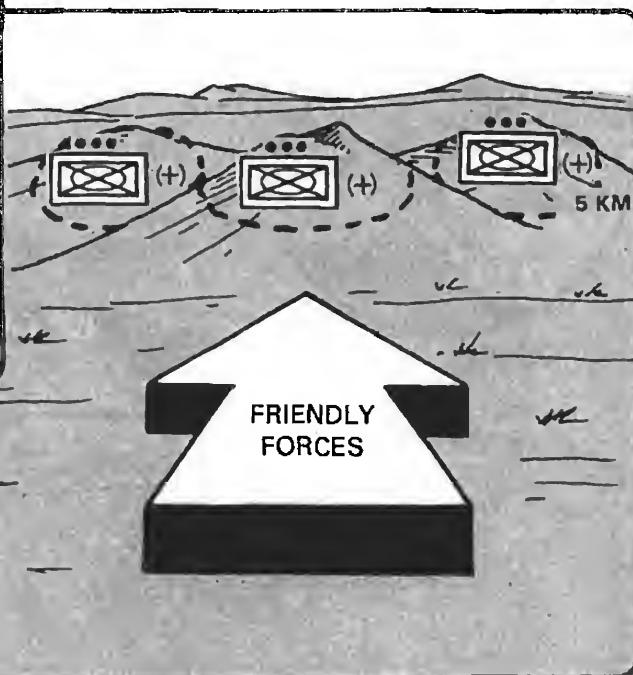
US cavalry, after advancing about 15-20km, contacts main force platoon-size units reinforced with tanks and antitank weapons, forward of the main defensive belt. Each platoon is reinforced with one or two main battle tanks (MBT's). There are also ZSU-23-4's or SA-9's with these forces.

The purpose of these forces is to:

- Deceive our reconnaissance units as to the location of their main defensive belt.
- Collect more information.
- Force early deployment.
- Fight to keep reconnaissance and security units from breaking through.

THREE REINFORCED
MOTORIZED RIFLE
PLATOONS

FRIENDLY
FORCES



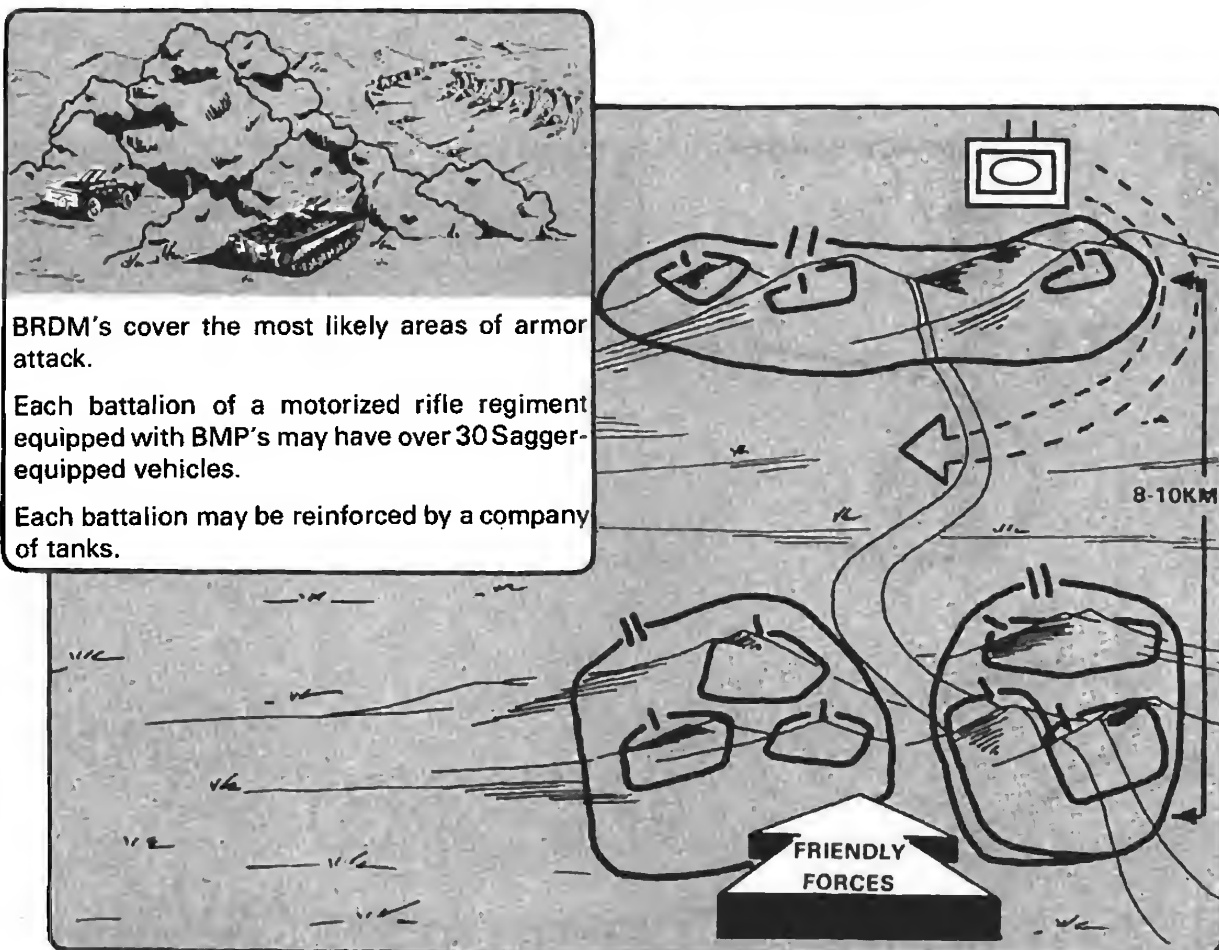
Platoons occupy mutually supporting platoon-size strongpoints designed to force US cavalry to move into killing zones. Unoccupied dummy positions are constructed to give the appearance of additional strength and cause confusion. The enemy fights stubbornly, trying to force premature deployment of the US main body. A Threat unit withdraws on order to a successive strongpoint to avoid decisive engagement. Threat withdrawal is covered by massive indirect fires, and direct fire from other strongpoints.

Main Defensive Belt. US cavalry units next encounter the main defensive belt. This consists of a series of battalion-size interlocking positions.

The Threat force's mission in the main defensive belt is to:

- Destroy and repel the attacker. The Threat force is dug in well and protected by extensive minefields.
- Counterattack all penetrations. The Threat force uses tank-heavy elements in the counterattack.

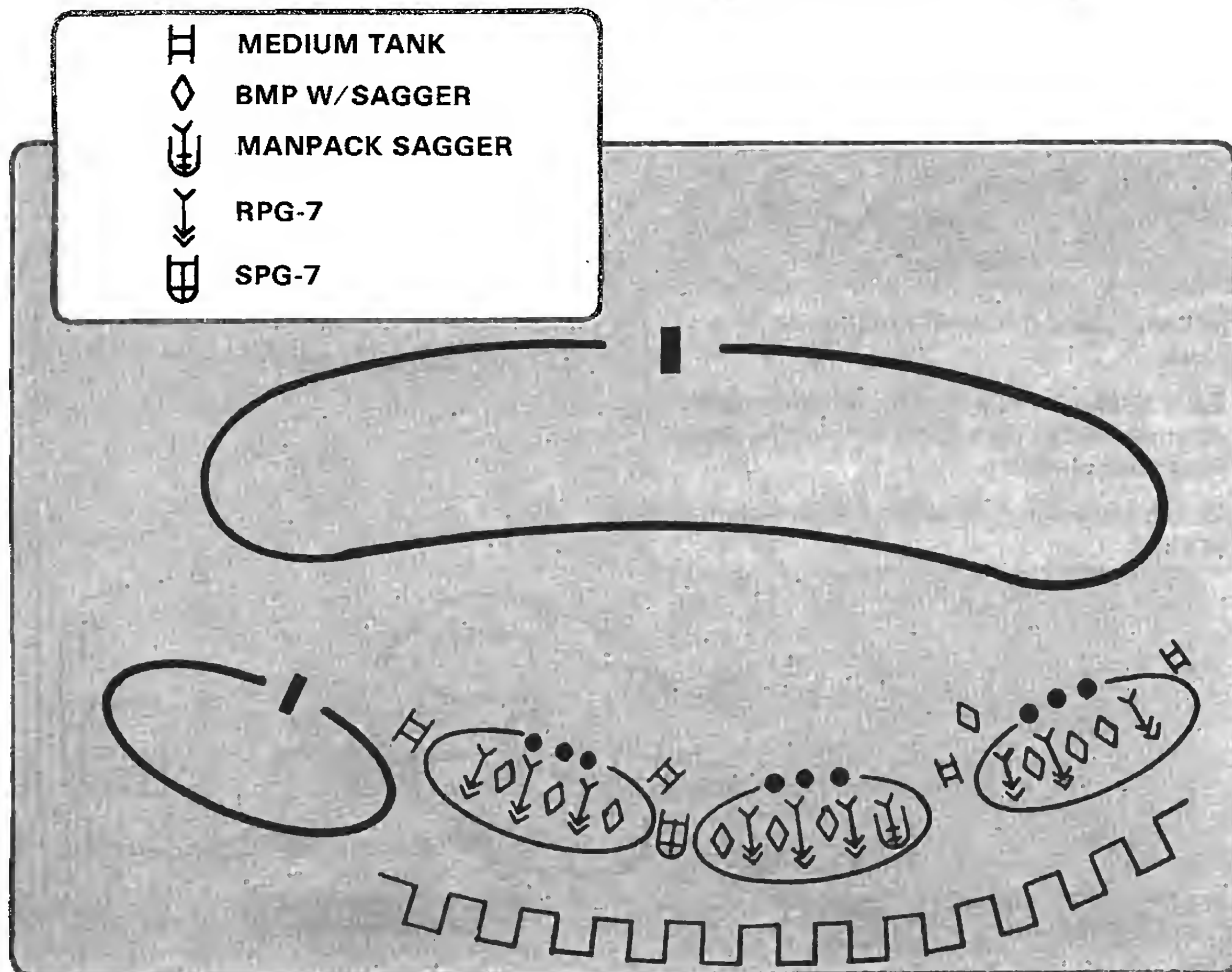
Main defensive belt forces occupy prepared company-size positions. Dummy positions are also prepared to confuse the attacker.



Threat Weapons. Main defensive belt forces are strong in antitank weapons, dug in, and supported by all available men and weapons.

Threat Tactics. A Threat battalion organizes a strongpoint into two echelons: two companies in the first and one company in the second. A tank reserve is normally formed at regiment and used to counterattack and destroy penetrations of the main defensive belt. This belt has:

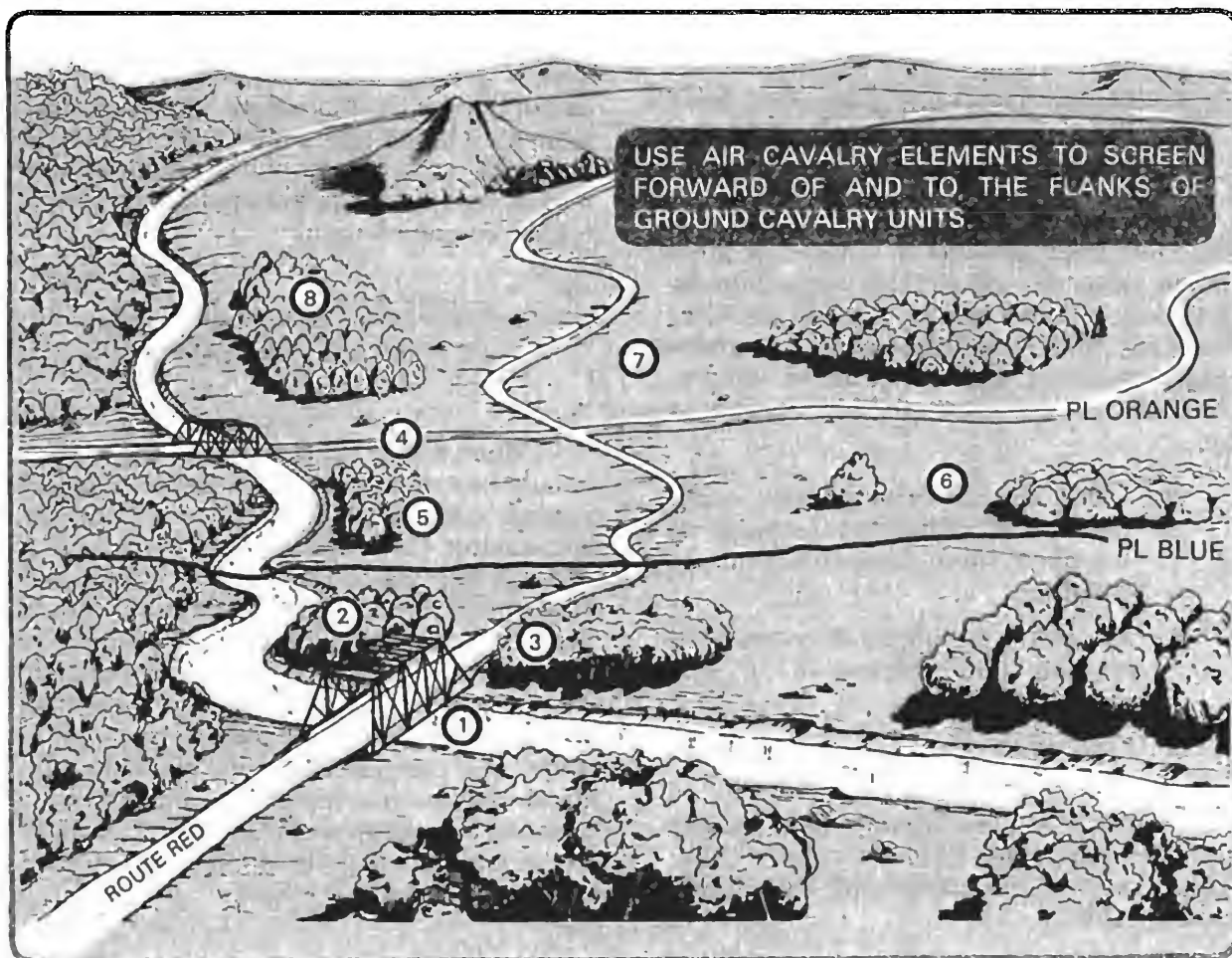
- Defense in depth. The two echelons and reserve provide a minimum of 10km of depth.
- Interlocking fire. All positions have interlocking fire. The second echelon provides long range, direct-fire support to the first echelon.
- Emphasis on antitank weapons. The basic defense is antitank.
- Coordination of all fires. Indirect, direct antitank, and tank fires are planned on all avenues of approach, flanks, and on top of and to the rear of all defensive positions.
- Cover, concealment, and obstacles. There is extensive engineer preparation of all positions, including minefields and camouflage.



ROUTE RECONNAISSANCE

A route reconnaissance mission is assigned to obtain detailed information of a *specified route* and *all adjacent terrain* from which the enemy could influence movement along that route. Route reconnaissance may be oriented on a road, on an axis, or on a general direction of advance. A route reconnaissance mission may also be assigned to obtain information of an enemy force moving

generally along a specific route, or to locate sites for construction of hasty obstacles to impede enemy movement. Route reconnaissance can normally be performed much faster than zone reconnaissance because effort is concentrated along the route, and not widely dispersed. The following is an example of route reconnaissance.



Route Red provides orientation for the reconnaissance effort. In addition to route Red, bridge 1 must be checked. All terrain features and towns that dominate movement along the route must be reconnoitered. Dominating features that could conceal enemy forces are 2, 3, 5, 6, 7, and 8. The

lateral route at 4 must be reconnoitered, as it is a high-speed avenue of enemy approach into the route Red area. The reconnaissance mission ends at the objective, which is merely a control measure. The objective may or may not be occupied by the enemy.

REGIMENT

The regiment does not normally conduct a route reconnaissance. Usually, the regiment obtains route information as part of another operation. When directed to obtain route information or when assigned a mission implying route reconnaissance, a regiment:

- Designates route(s) of interest.
- Assigns a mission(s) to a squadron(s) and/or the air cavalry troop.
- Should not assign a squadron more than three major routes if enemy contact is expected.

If speed is essential and terrain is relatively open, such as in a desert or great plains area, the air cavalry troop may be assigned a route reconnaissance mission. Normally, the reconnaissance is completed most rapidly if air and armored cavalry elements are used together. This can be done by:

- Using the air cavalry troop under regimental control to reconnoiter to the front and flanks of armored cavalry.
- Assigning the air cavalry troop the mission and reinforcing it with armored cavalry.
- Placing air cavalry teams under the control of a squadron.

On occasion, air cavalry may assume operational control of ground cavalry units. This, however, restricts the mobility of the air cavalry unit.

ARMORED CAVALRY SQUADRON

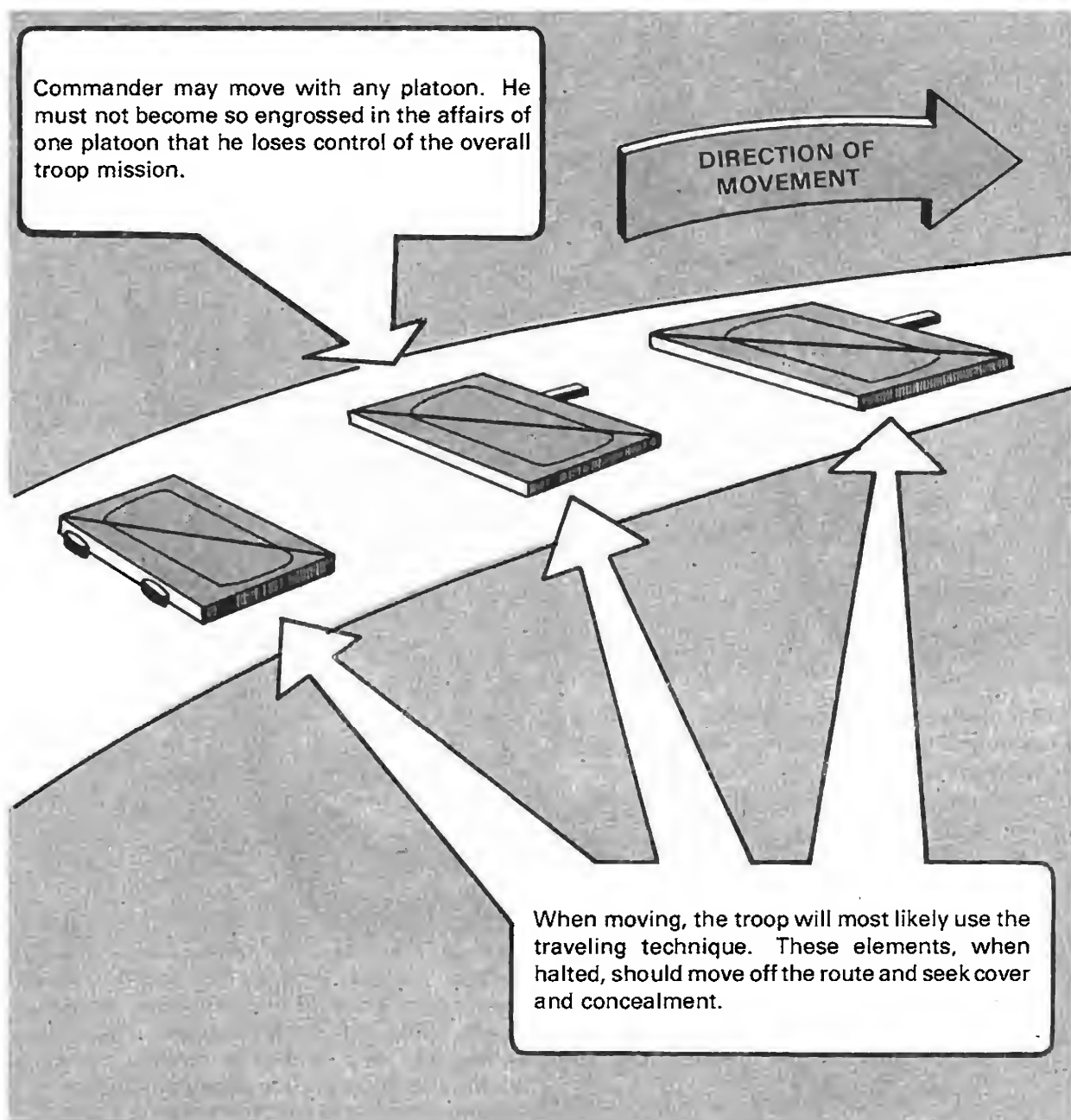
The armored cavalry squadron does not normally conduct a route reconnaissance. Usually, the squadron obtains route information as part of a zone reconnaissance or by assigning the mission to a troop. Only one major route should be assigned a troop when enemy contact is expected. If time is essential and the route and surrounding area is relatively open, such as in a desert or great plains area, the divisional squadron may assign a route reconnaissance to the air cavalry troop. A discussion of route reconnaissance by an air cavalry troop begins on page 5-45. A discussion of techniques of route reconnaissance by an armored cavalry troop begins on page 5-18.

ARMORED CAVALRY TROOP AND PLATOON

When enemy contact is expected, a troop should be assigned only one major route. If enemy contact is unlikely, a troop can reconnoiter three routes. Adjacent terrain dominating the route, woods, towns and lateral routes from which the enemy could place direct fire or attack friendly forces on the route must be reconnoitered. The class of bridges; location of fords and bypasses; clearance of overhead crossovers; width, slope, and composition of the roadway; and depth of streams are important factors which must be determined and reported. The velocity of a stream or river is important if units will have to "swim" vehicles.

Armored Cavalry Troop. A troop reconnoitering a single route normally deploys one platoon on the route flanked by the other two platoons. The center platoon reconnoiters the route and adjacent terrain.

Flank platoons reconnoiter lateral routes and terrain dominating the primary route. The flank platoons reconnoiter forward of the platoon reconnoitering the route to uncover enemy ambushes.



If three routes are assigned, the troop commander assigns a route to each platoon. If only two routes are assigned, one platoon moves behind the platoon assigned the most difficult or important route, ready for use as the situation develops.

The troop commander and FIST are forward. When the troop reconnoiters one route, the command group normally follows the platoon reconnoitering the route. If the troop is reconnoitering more than one route, the command group follows the platoon most likely to make enemy contact.

This element checks key terrain on the north flank of the route.

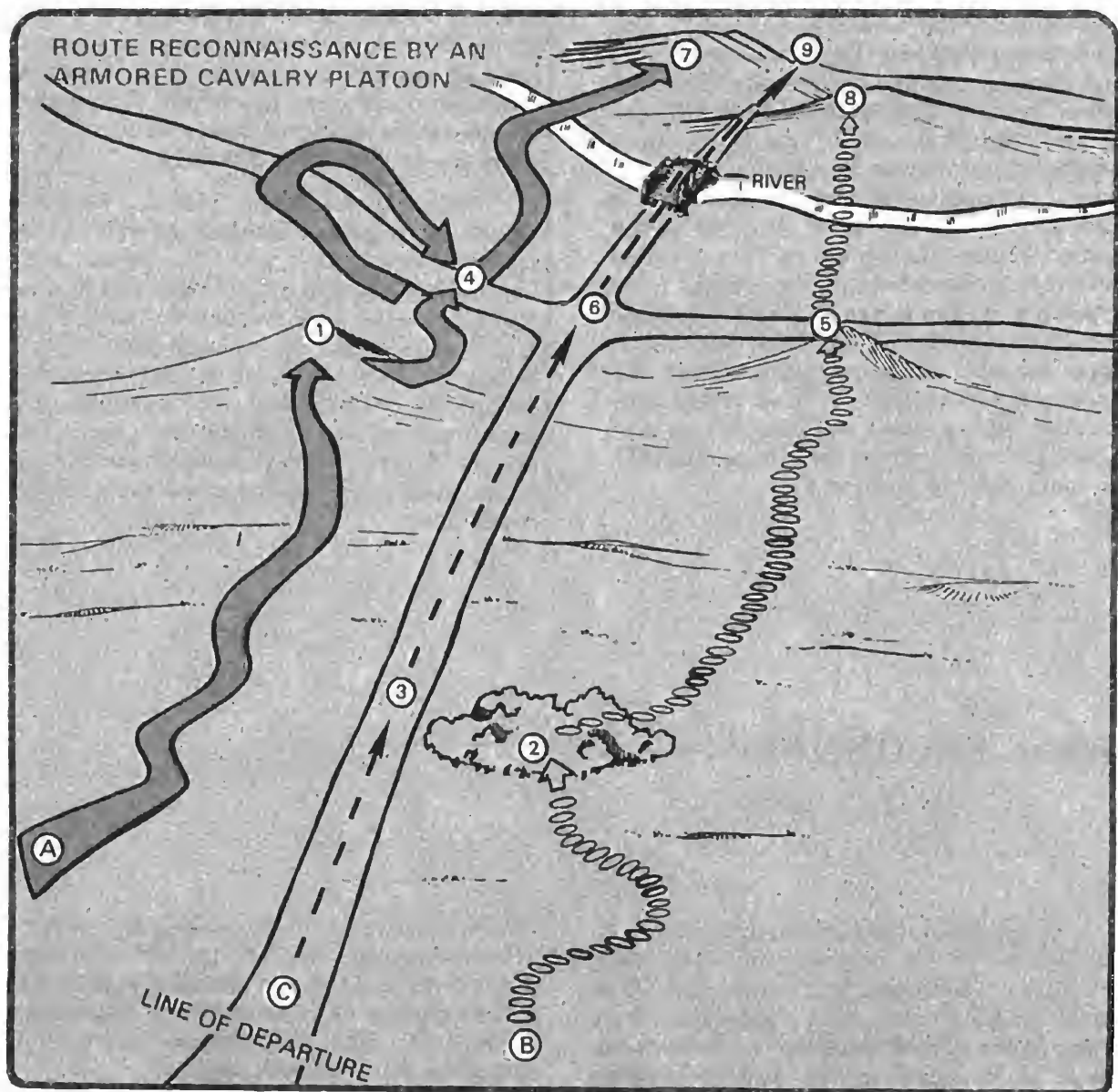
This element checks key terrain on the south flank of the route.

This element uses a combination of the three movement techniques during mission accomplishment.

Detailed reports, such as route and bridge reports, are compiled at troop based on spot reports submitted by the platoon(s). The troop commander may rendezvous with a platoon leader to obtain or provide detailed information.

Armored Cavalry Platoon. A cavalry platoon should be assigned only one route. A platoon reconnoitering a route may use either a two-team or three-team organization. The three-team tank-consolidated organization should be used when the tanks can provide overwatch fires over the route or when overcoming an obstacle. In the two-team method, one team is assigned the left flank

and the other team the right flank. The scouts from one team are assigned to reconnoiter the actual route. The platoon leader moves where he can best control the platoon and maintain communications with troop headquarters. Actions of a platoon conducting a route reconnaissance are shown below. In this situation, the platoon is organized in two teams.



As the line of departure (LD) is crossed, the platoon leader sends Team A to reconnoiter the high ground at position 1 and Team B to reconnoiter the woods at position 2. The scouts reconnoitering the actual route proceed along the flanks of the route. Teams A and B use bounding overwatch to increase security. Teams A and B finish their reconnaissance and remain in position, while the scouts reconnoitering the route move to position 3 and report their findings to the platoon leader. The scouts in Team A then move forward to reconnoiter the lateral route at position 4. The tanks in Team A provide overwatch for the scouts from position 1. Upon completing the reconnaissance, the scouts return to position 4. Team B reconnoiters the high ground and position 5 and remains in place while the scouts checking the route move to position 6.

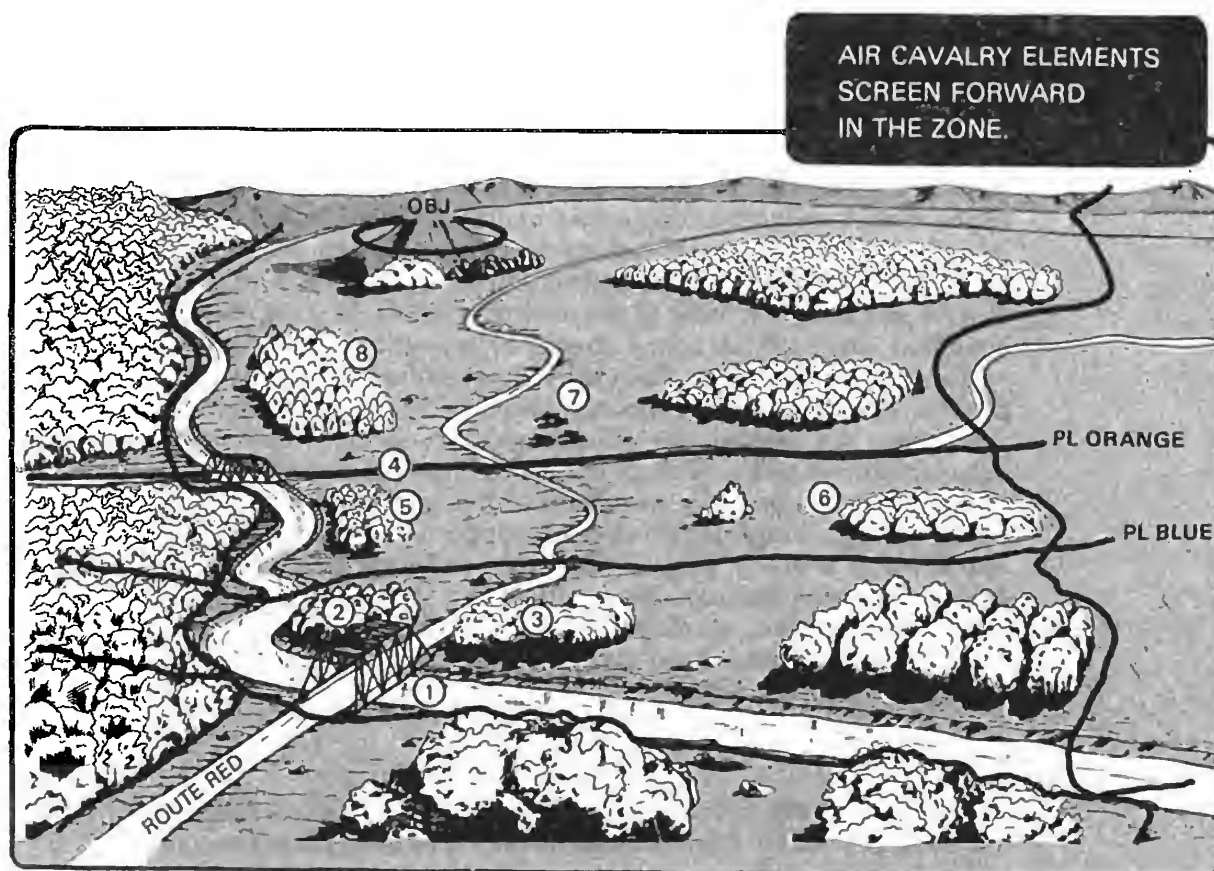
The scouts from both teams move forward to look for fords, cross the stream, and reconnoiter the high ground at position 7 and 8. Each team sends one vehicle back to the bridge to provide security. Next, the platoon changes into a three-team, tank-consolidated organization to clear the bridge. The tanks consolidate at position 6 to provide overwatch while the bridge is being cleared.

Personnel from the platoon leader's vehicle, with a mine detector, as well as the security personnel check the bridge and approaches while being overwatched by the tanks. Once the reconnaissance of the bridge and approach has been completed and the bridge has been classified capable of safely sustaining the heaviest vehicle weight, the crossing may begin. When the platoon is across the river, it reforms into the two-team organization and continues the route reconnaissance.

ZONE RECONNAISSANCE ---

Zone reconnaissance is a *detailed* reconnaissance of all natural and man-made features within specified boundaries. It is more thorough and time consuming than other types of reconnaissance. The purpose may be to locate enemy and/or suitable

routes of advance for the main body. A zone reconnaissance mission is normally performed when the enemy situation is in doubt, or information on cross-country trafficability is desired. The following is a situation requiring zone reconnaissance.



The zone to be reconnoitered is defined by lateral boundaries, a line of departure, and an objective. The objective provides a termination point for the mission; it may or may not be occupied by the enemy. A phase line may also be used as a termination point. The zone must be thoroughly reconnoitered, whereas a route reconnaissance would require only a reconnaissance of route Red and the numbered features.

REGIMENT

The regiment performs zone reconnaissance as part of a covering force mission. Covering force missions are discussed in chapter 6.

ARMORED CAVALRY

SQUADRON

A squadron may be assigned zone reconnaissance as a primary mission. The squadron conducts zone reconnaissance by advancing boldly, normally with three armored cavalry troops abreast. On those rare occasions when a squadron is assigned a narrow front requiring only two troops abreast, the third troop is kept in reserve. The reserve is committed to develop the situation rapidly, help maintain forward momentum, and help reconnoitering troops maintain freedom to maneuver.

The squadron must reconnoiter all routes and terrain and locate all enemy forces within its assigned zone. If enemy contact is made, the situation is rapidly developed through standard actions on contact. Courses of action available to the squadron are:

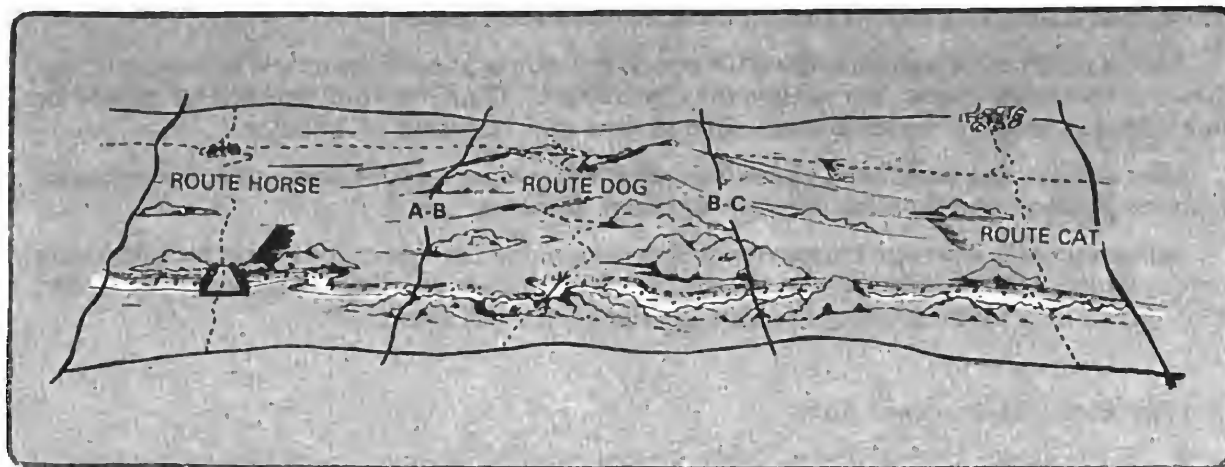
- **Attack** to destroy the enemy. This is done by a hasty attack or a series of hasty attacks at the troop and platoon level. It is best done by allowing the troop in contact to exert pressure on its own initiative. The other troops should continue to advance in an effort to find and attack a flank of the enemy position. In a regimental squadron, the tank company should be brought rapidly forward and committed to destroy the enemy force, preferably by attacking a flank. All of this must be accomplished rapidly because the longer the delay, the greater the effectiveness of enemy reaction. A squadron commander, with all maneuver forces in contact, should influence the situation by massing or shifting supporting fires and using attack helicopters and close air support. The more enemy he can kill with artillery, attack helicopters, and close air support, the fewer casualties the squadron will suffer. There should be no attempt at gradual escalation. Overpowering force (maneuver forces and supporting fires) should be used to crush the enemy as rapidly as possible.

- **Bypass** the enemy and leave an element in visual contact. Air cavalry is often ideal for this. It is best to know what a bypassed enemy is doing. The squadron is responsible for knowing until relieved by higher headquarters or following forces.

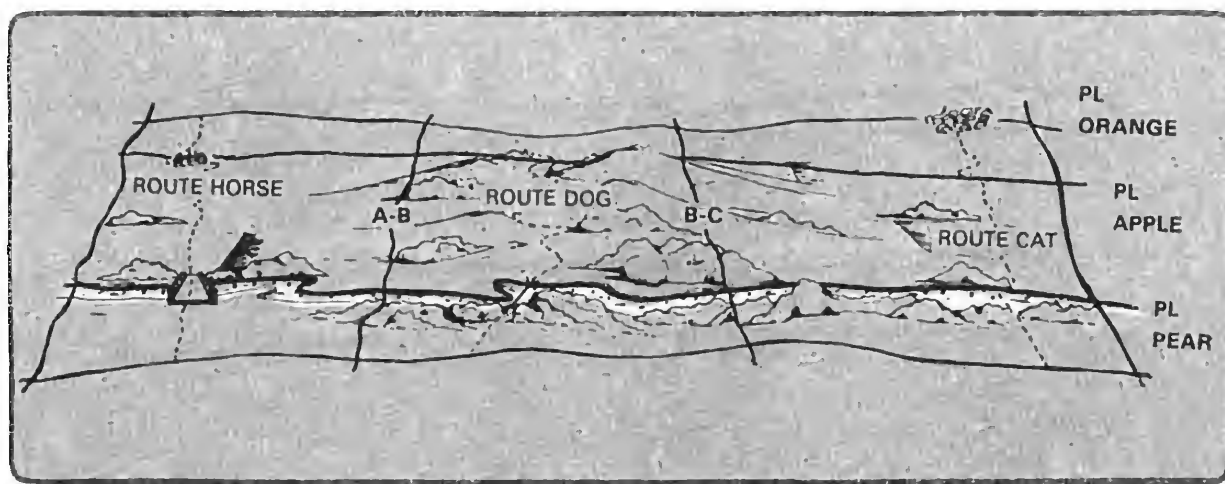
- **Defend**, if the enemy force encountered is superior in strength. A squadron conducting a zone reconnaissance is in an ideal posture to defend, or to delay a larger enemy force until the squadron can be reinforced or withdrawn. It is simply a matter of reorientation. In such a situation, the squadron maintains an aggressive attitude and continues to develop the situation by aggressive probing. This may result in detecting a weakness or a gap. It will certainly tend to confuse the enemy. The probing is done by skillfully using cover and concealment afforded by the terrain. At times, the probing elements will be able to catch an enemy force by surprise and destroy it in a matter of seconds or minutes with flanking fire.

A squadron's lateral limits of responsibility during zone reconnaissance are normally a forward extension of boundaries of the headquarters assigning the mission.

Troop B is assigned a narrow front because reconnaissance of route Dog will be time-consuming. This is primarily because of the requirement to reconnoiter much dominating rough and wooded terrain to the flanks offering good cover and concealment for the enemy.



The squadron assigns boundaries between troops to outline zones of responsibility. These boundaries should be along easily recognizable terrain features, such as roads, streams, fences, and ridge lines. When assigning troop boundaries, tasks should be equalized among the troops. This does not mean that equal frontages should be assigned. It means a careful study of the map, mission requirements, and known enemy situation must be made to ensure all troops can advance generally abreast.



After establishing boundaries, the squadron designates a line of departure and specifies the crossing time. This is done to ensure a simultaneous advance across the squadron's front. Phase line(s) are drawn as needed to control and coordinate forward movement. Failure to keep reconnoitering troops generally abreast can result in bypassing of the enemy or envelopment of troops by enemy forces.

Phase lines (PL) should follow a feature or features easily recognizable at night or through the smoke and haze of battle. In cavalry, it is critical to know your location and that of subordinate units. The lack of such knowledge can end in defeat.

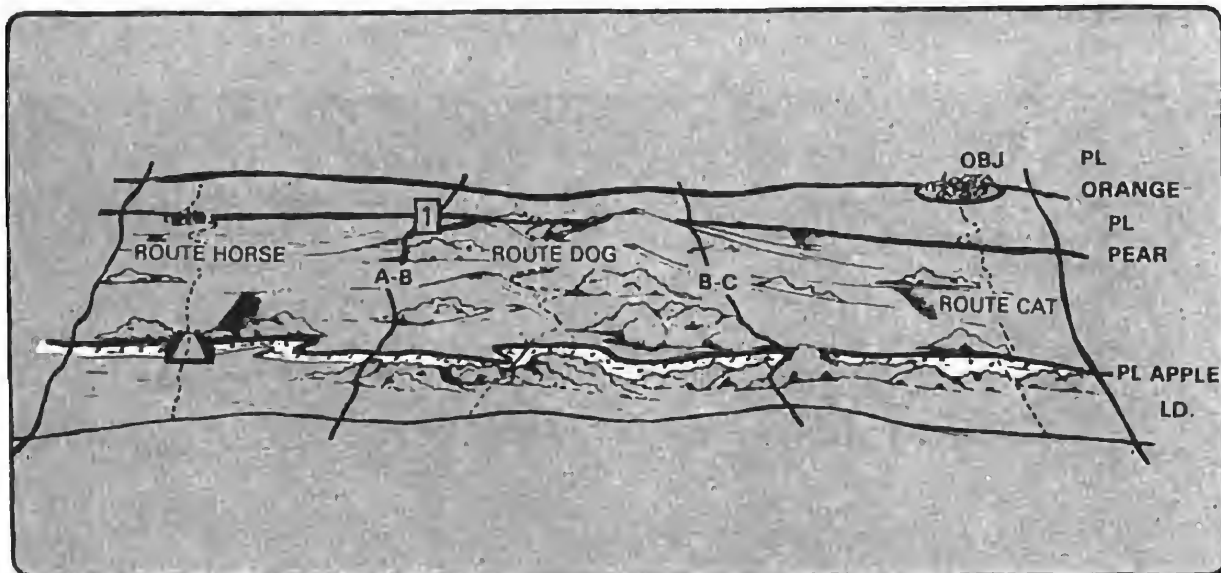
Troops report crossing phase lines. Troops *do not* stop at phase lines unless ordered to do so. Once the operation starts, the enemy may be alerted. Thus, forward momentum should be maintained in order to reduce enemy reaction time and keep him off balance.

After designating an LD and phase lines, contact points are designated on troop boundaries to ensure physical coordination between adjacent elements.

Contact point 1, between Troops A and B, is designated because of the lateral route in Troop A zone, which continues into Troop B zone. Contact at that point also ensures Troop B that Troop A can help by controlling the high ground on the left flank.

Contact points are designated:

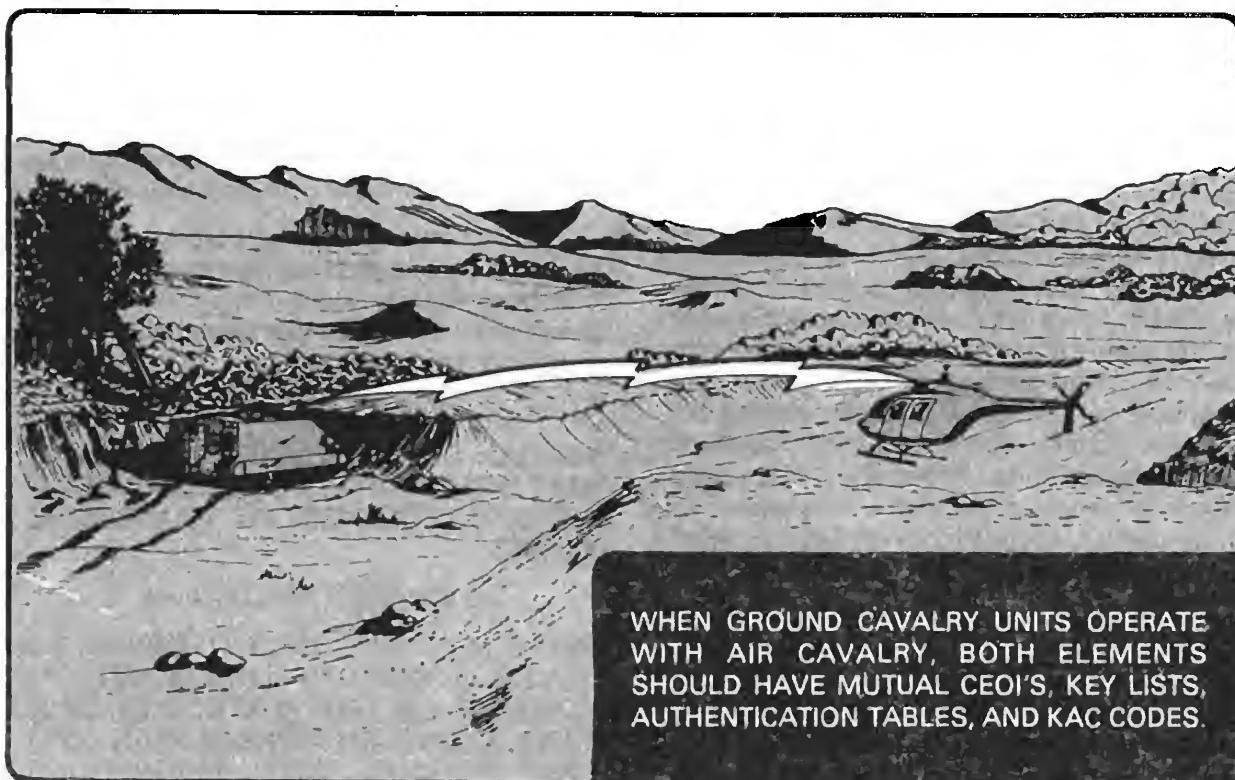
- If the area is critical (for example, a route crossing from one troop zone into another).
- If contact is needed to control movement.
- To ensure the zone is covered.
- As a contingency measure (for example, a contact point may be designated a coordinating point if a defense is required).



In order to ensure continuity of effort, the squadron designates a phase line or objectives to stop the operation. Each troop and unit must be instructed what to do when the mission is finished. This provides orientation. If the squadron has not been given a follow-on mission, armored cavalry troops should be assigned objectives on dominating terrain.

At times, a squadron will contact an

enemy force strong enough to halt its advance. If attacked, the squadron defends as necessary to avoid decisive engagement. This means the squadron's mission will end short of the designated phase line or objectives. It does not mean the squadron failed in mission accomplishment. It simply means the enemy was found and the main body has information required to refine its planning and orientation.



During movement to contact, air cavalry may be used to reconnoiter to the front and/or flanks of a squadron to increase the speed of the reconnaissance. If the terrain is fairly open, a divisional squadron may use its air cavalry troop to conduct zone reconnaissance and assign armored cavalry troops route reconnaissance missions. As the situation develops, armored cavalry elements reconnoiter areas that can't be effectively reconnoitered by air cavalry. If terrain provides good cover and concealment, armored cavalry troops may reconnoiter while air cavalry

elements screen their advance. When this technique is used, air cavalry reconnoiters forward of armored cavalry troops to provide early warning of terrain and enemy. When enemy contact is made, air cavalry can be used to help develop the situation, to screen flanks, and/or maintain contact between troops. A regimental squadron uses available air cavalry elements in the same manner. The air cavalry troop may be placed in the OPCON of a squadron. In this case findings are passed directly to the squadron

Enemy contact is normally made first by scouts and aerial scouts. When aerial scouts make first contact, they should maintain surveillance until ground units make contact. If first visual contact by aerial scouts results in a good target, such as a concentration of tanks, men, or vehicles, the squadron uses

artillery, attack helicopters, and/or close air support while ground elements are en route. When enemy contact is first made by ground scouts, the parent troop should develop the situation. Elements not in contact continue reconnoitering in zone until contact is gained.

ARMORED CAVALRY TROOP AND PLATOON

Zone reconnaissance by an armored cavalry troop is conducted on a broad front. At the troop and platoon level it is essentially a movement to contact. All routes and terrain within the zone are reconnoitered. *When available, air cavalry screens forward and to the flanks of ground elements to provide early warning.* When enemy contact is gained, the situation is developed through actions on contact. Enemy forces are not bypassed without permission. Normally, a bypassing troop is required to leave a platoon to maintain contact until relieved by air cavalry or follow-on forces.

Armored Cavalry Troop. A troop normally deploys three armored cavalry platoons abreast. Each platoon is assigned a zone. A platoon's zone should contain only one main route or axis of advance. Depending on terrain and situation, a platoon may be assigned a zone, route, or area reconnaissance mission. It is desirable to not divide responsibility for key terrain features or avenues of approach. However, avenues of approach in a desert, great plains area, and valley are so wide, responsibility must be divided. Similarly, a key terrain feature, such as dominating terrain, may be too large for one platoon to reconnoiter. Therefore, phase lines, contact points, and objectives are used to help keep platoons abreast.

Armored Cavalry Platoon. A platoon organizes into two, three, or four teams.

During the mission, team organization may change as the terrain and situation change.

Actions of a troop and platoon conducting zone reconnaissance are shown below. The troop commander follows troop leading procedures. His oral order to platoon leaders and other key personnel is:

ENEMY SITUATION

WE CAN EXPECT TO FIND THE SECURITY ZONE OF A MOTORIZED RIFLE DIVISION FORWARD OF PHASE LINE WHITE.

FRIENDLY SITUATION

SQUADRON HAS BEEN ORDERED TO COVER DIVISION'S MOVEMENT TO CONTACT. SECOND PLATOON OF COMPANY A, 25TH ENGINEERS IS IN GENERAL SUPPORT. THEIR PRIORITY OF WORK IS TO CLEAR AND IMPROVE ROUTE RED. EXECUTIVE OFFICER, COORDINATE THIS WITH 1ST PLATOON'S ADVANCE AND TROOP B.

MISSION

OUR MISSION IS TO CROSS LD AT 0700 AND RECONNOITER IN ZONE, REACHING PHASE LINE RED BY 1600. ON REACHING PHASE LINE RED, BE PREPARED TO OCCUPY OBJECTIVE GOLD AND ASSIST FORWARD PASSAGE OF 3D BRIGADE.

EXECUTION

WE WILL USE THREE PLATOONS ABREAST: 1ST PLATOON ON LEFT, 2D PLATOON IN CENTER, 3D PLATOON ON RIGHT.

1ST PLATOON. RECONNOITER IN ZONE. PAY PARTICULAR ATTENTION TO WOODED AREA AT A AND HIGH GROUND AT B.

2D PLATOON. RECONNOITER IN ZONE. HIGH GROUND AT C IS KEY TERRAIN IN YOUR ZONE. IT ALSO DOMINATES MOVEMENT FORWARD OF PHASE LINE GREEN IN THE 3D PLATOON'S ZONE. WHEN YOU HAVE CHECKED IT, REPORT SO I CAN MOVE THE 3D PLATOON FORWARD OF PHASE LINE GREEN.

3D PLATOON. AFTER CROSSING LD, RECONNOITER THE TOWN AT D, THEN MOVE TO WHERE YOU CAN OBSERVE THE SOUTH SLOPE OF THE HILL AT C. BE PREPARED TO ASSIST 2D PLATOON. DO NOT CROSS PHASE LINE GREEN WITHOUT MY PERMISSION. RECONNOITER IN ZONE AFTER CROSSING PHASE LINE GREEN.

Note. Third Platoon's initial mission is an area reconnaissance.

RADAR SECTION. BE IN POSITION AT R1 AND R2 BY 0645. THESE AREAS ARE SECURE. R1 MONITOR HIGHWAY IN 1ST PLATOON'S ZONE. R2 SEARCH HILL MASSES AT B AND C ALTERNATELY. OCCUPY POSITIONS R3, R4, R5, AND R6 ON ORDER.

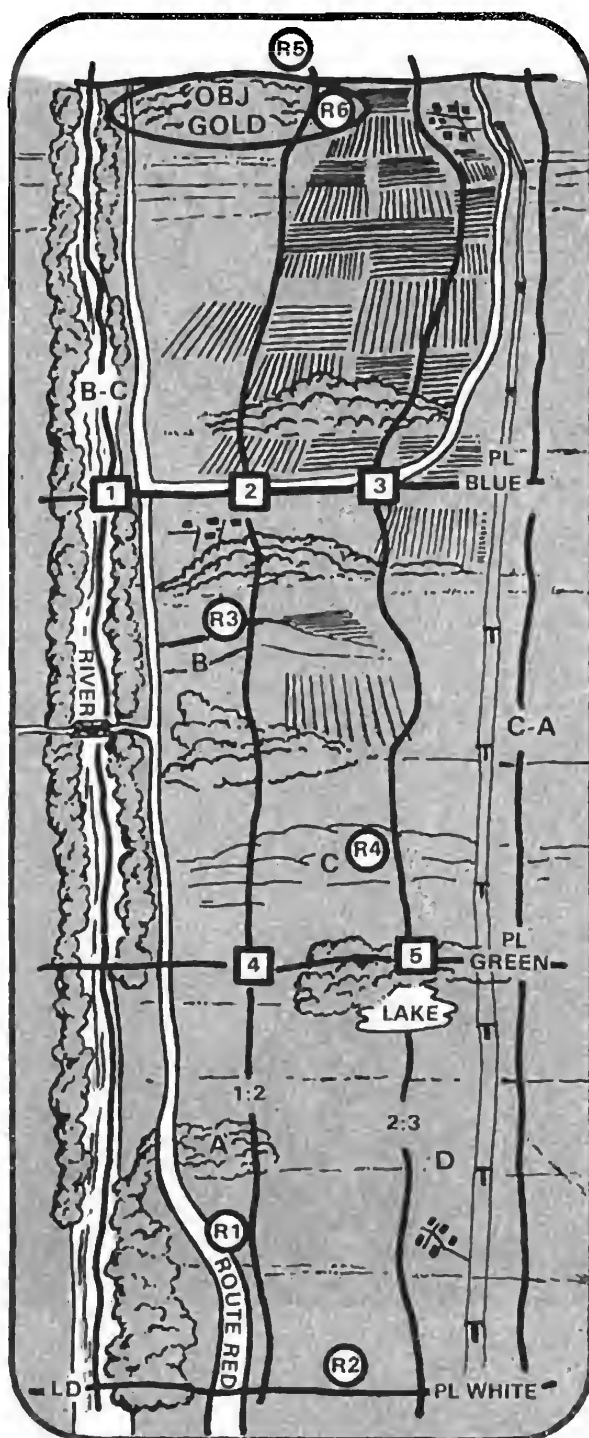
COORDINATING INSTRUCTIONS

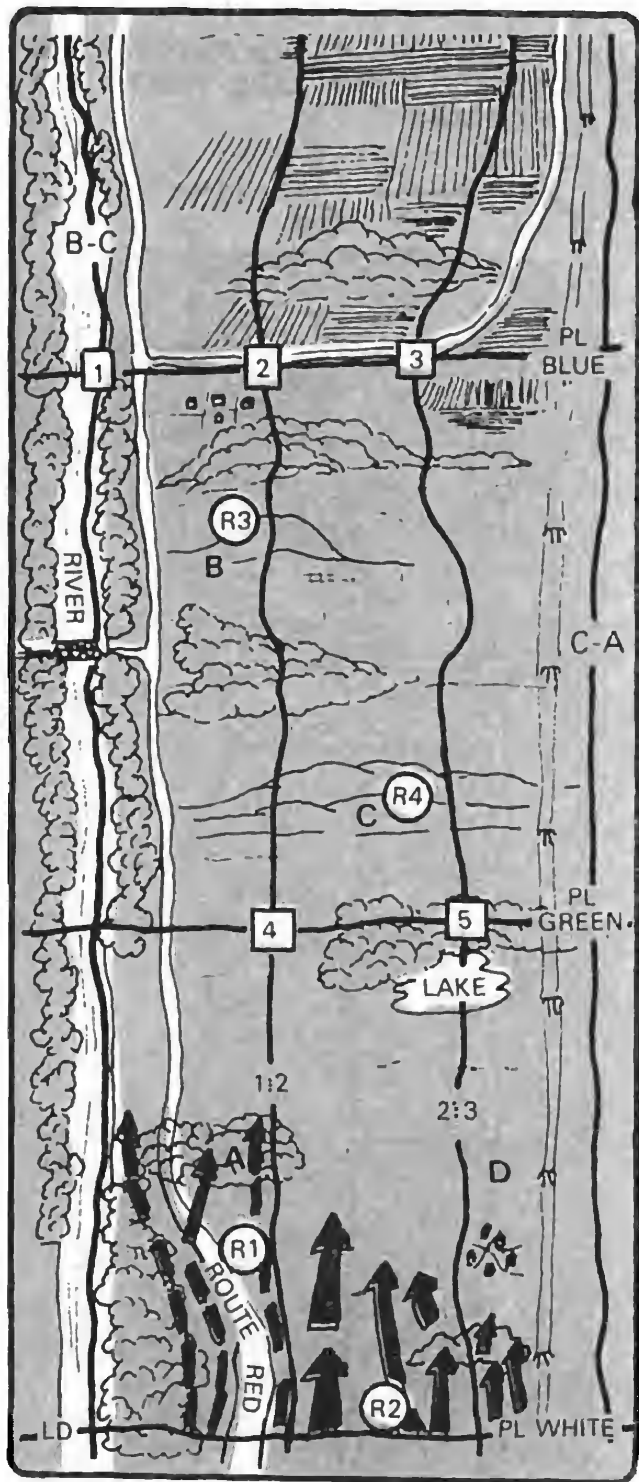
PHASE LINE WHITE IS LD. DO NOT CROSS PHASE LINE RED WITHOUT MY PERMISSION.

COMMAND AND SIGNAL

THE FO AND I WILL FOLLOW 2D PLATOON INITIALLY. CP AND TRAINS

MOVE IN THE 2D PLATOON'S ZONE. THE TIME IS 0500. ARE THERE ANY QUESTIONS?





After receiving the troop commander's order, subordinate leaders complete their troop leading procedures. They must ensure their men understand the situation and what the troop is to do. At 0645 hours radar teams are in position at R1 and R2 monitoring and searching their assigned areas. At 0700 hours the troop crosses the LD with three platoons abreast. The 1st and 2d Platoons, each using three teams moving by bounding overwatch, start reconnoitering in assigned zones. The 3d Platoon moves directly to and reconnoiters the town at D. Dismounted scouts are the first element to enter the town.

3D PLATOON

Two-team formation is selected because of dismounted capability needed to reconnoiter the town. After completing reconnaissance of the town, the platoon reorganizes into a three-team formation to reconnoiter rapidly forward to phase line Green. Because of the necessity to be prepared to support 2d Platoon's vicinity of the hill, the platoon leader elects to have the tanks consolidated.

2D PLATOON

Because the terrain is open the tanks can support the scout element with fire from a central location. The platoon leader's decision in this situation is also influenced by the strong possibility of an enemy position on high ground forward of phase line Green.

1ST PLATOON

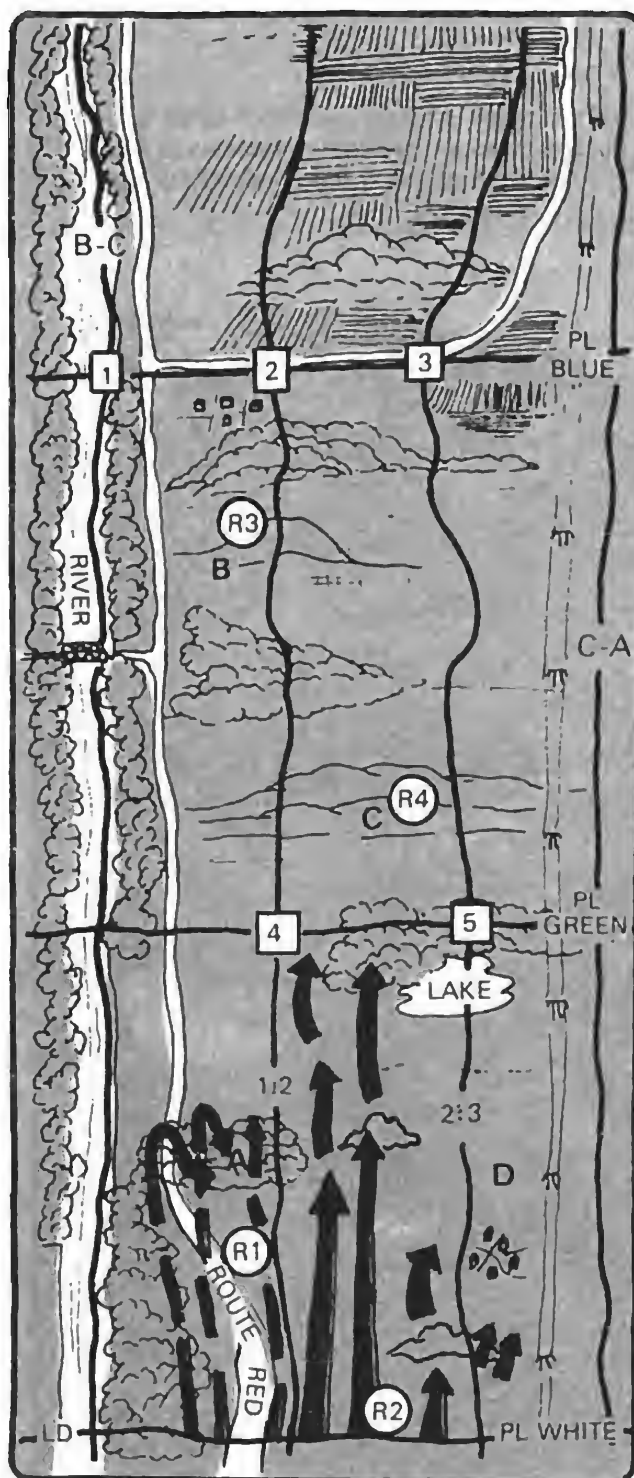
The armor section is up, because the nature of the terrain and wooded areas prevented the armor section from supporting all elements from one location.

The 1st Platoon reconnoiters trails, routes, and likely locations for enemy positions within the woods at A. As the platoon leaves the woods, the platoon leader monitors the radar section's report of movement on hill B. Shortly thereafter, Team B receives large-caliber automatic weapons fire followed by indirect fire. Team B's bounding element moves to a covered and concealed position and reports to the platoon leader. The platoon leader, in turn, reports to the troop commander while Team B visually searches for enemy activity.

Team A continues to reconnoiter forward without enemy contact. Team C moves forward out of the woods toward Team B to help develop Team B's situation. At this time, Team C comes under large-caliber automatic weapons fire followed by indirect fire. Team C deploys immediately to cover and concealment. The platoon leader decides the platoon must move forward to develop the situation. He reorganizes the platoon into two teams and reports his plan.

Upon receiving the platoon leader's order to form two teams, Team A moves under cover and concealment toward Team C. When Team A reaches Team C's location, the platoon leader moves Teams A and C forward toward Team B.

The troop commander brings artillery suppressive fires and smoke on hill B to cover 1st Platoon's movement. He then orders 2d Platoon to occupy a position in zone from where it can support 1st Platoon with long range tank fire. First Platoon moves by bounding overwatch to the last covered position short of hill B. The leader then leads Team A toward hill B to further develop the situation while Team B and the mortar squad overwatch.



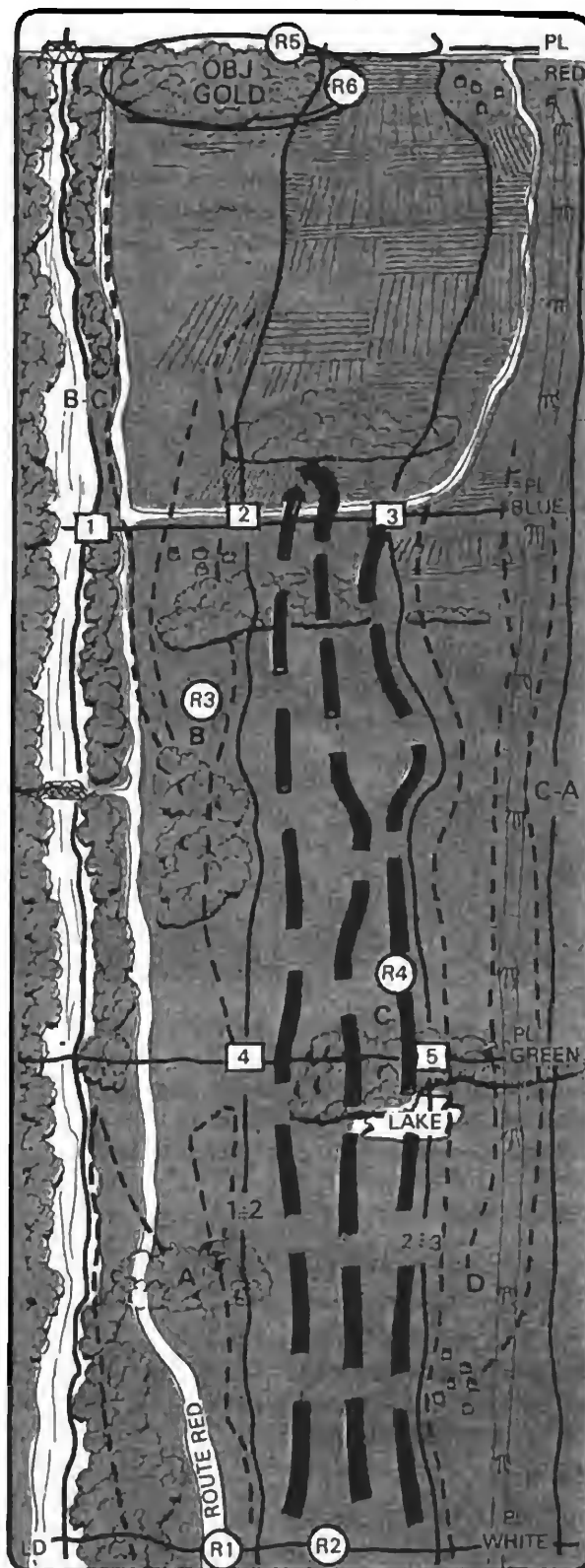
As the team is taken under fire by an antitank guided missile (ATGM), light armor vehicles in Team B provide suppressive fire on the missile site and surrounding area.



As Team A maneuvers up hill B, an enemy antitank guided missile (ATGM) is launched at the lead vehicle. Team B immediately places suppressive fires on the missile launch site and the surrounding area. The gunner is often located away from the launch site. At the same time, Team A dashes to a covered and concealed position. The platoon leader signals Team B forward. The platoon continues moving by bounding overwatch, using direct and indirect fires for suppression against possible enemy positions. As the platoon closes on the impacting artillery, the platoon leader requests that artillery fires be shifted to the west and reverse slopes. As artillery fire shifts, the platoon increases automatic weapons fire and maneuvers by bounding overwatch around the east slope. Going around the east slope prevents cresting the hilltop and permits long range direct fires of the 2d Platoon's armor section to support. The 1st Platoon suddenly receives high-velocity antitank fire and large-caliber automatic weapons fire from the west. The 2d Platoon's armor section, having detected a muzzle flash, opens fire. The 2d Platoon leader requests indirect fire in the target area. When artillery shells begin falling, his mortar squad stops firing to conserve ammunition. As two explosions followed by flames and dense black smoke occur, enemy fire against 1st Platoon ceases. Concurrent with 2d Platoon's action, 1st Platoon deploys to cover with the loss of one scout vehicle. The platoon fires into the target area while the platoon leader moves forward, Team B and the remaining vehicles of Team A provide overwatching suppressive fires.

The troop commander orders 1st Platoon to search the area and 2d Platoon to continue reconnoitering in zone. Third Platoon reports that the town at D is clear and moves forward toward phase line Green. First Platoon reports one PT-76 armored vehicle, two motorcycles, and two BRDM reconnaissance vehicles destroyed. This information indicates the enemy security zone has been reached. The platoon should also search for unit identification (maps, documents, and letters). The platoon should rapidly report such information and coordinate with the troop commander for evacuation of prisoners and items of possible intelligence value (appendix H). In some instances, captured items and prisoners may be taken to the troop CP by a scout squad. At other times, the troop commander may rendezvous or direct other elements to rendezvous with the platoon. The platoon should quickly search and leave the area because the enemy may saturate the position with artillery fire.

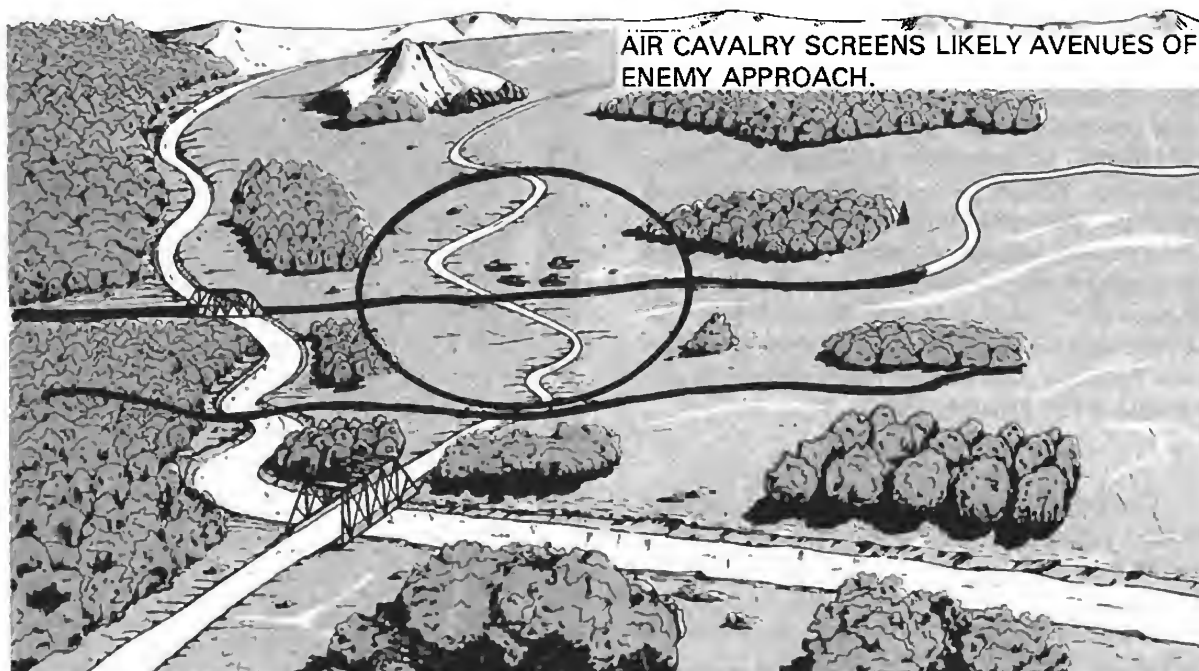
Platoons continue to make spot reports concerning routes, bridges, bypasses, towns, obstacles, cross-country trafficability, and the enemy. Each time the enemy is encountered, the situation is developed by a combination of bounding overwatch and suppressive fires. At times, an enemy element engaged by one platoon is destroyed by flanking fire from another platoon. As platoon leaders report crossing phase line Blue, the troop commander instructs 1st Platoon to make and report contact with troop B at contact point 1 and instructs the other platoons to make and report contact at contact points 2 and 3. He then displaces troop radars to R3 and R4. *Enemy forces found in a platoon's zone are destroyed, neutralized, or bypassed. A platoon does not bypass an enemy force without permission.*



AREA RECONNAISSANCE

Area reconnaissance is conducted to obtain information concerning a specified area. An area reconnaissance mission is assigned when the commander desires infor-

mation about a town, ridge line, woods, or other feature that may be critical to operations. Below is an example of area reconnaissance.



The specific area to be reconnoitered is designated by a boundary line completely enclosing the area. The town, road junction, and controlling terrain must be thoroughly reconnoitered as in a zone reconnaissance.

REGIMENT

The regiment does not normally conduct an area reconnaissance. A regiment desiring information or directed to obtain information about a specific locality:

- Designates limits of the area of interest.
- Designates routes or avenues of advance and return.

NOTE: A squadron normally moves over several routes to reduce closing time.

- Assigns the mission to a squadron and/or the air cavalry troop.

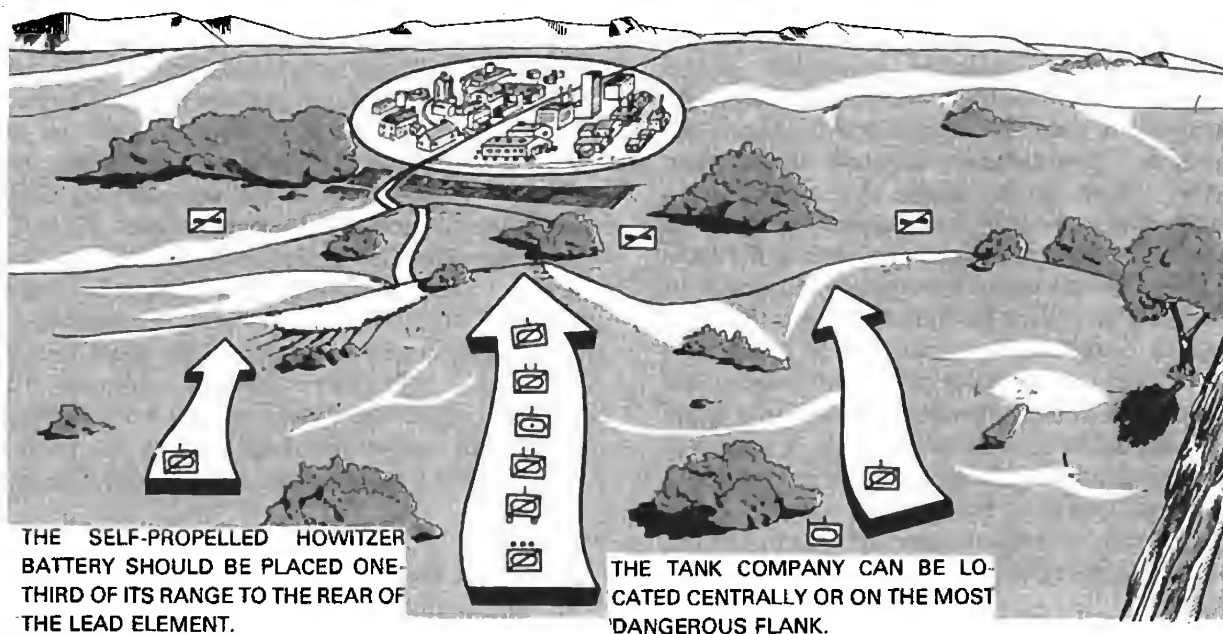
Considerations pertaining to the use of the air cavalry troop for route reconnaissance pertain equally to area reconnaissance.

ARMORED CAVALRY SQUADRON

An area reconnaissance, with the exception of movement to and from the area, is conducted the same as a zone reconnaissance. An armored cavalry squadron may move to and reconnoiter one large area or several small dispersed areas, or it may assign such missions to one or more troops. Area reconnaissance may be performed behind friendly or enemy lines. Emphasis is normally placed on reaching the area quickly. Enemy situations encountered en-

route are developed only enough to ensure that reconnoitering elements can bypass.

A squadron commander with an area reconnaissance mission studies the factors of METT. He then decides the force needed and whether to move on a single route or over multiple routes. A divisional armored cavalry squadron assigned an area reconnaissance mission forward of friendly lines should be reinforced with a tank company.



When moving to an area behind friendly lines, reconnoitering elements conduct a tactical march. When moving forward of friendly positions, routes must be carefully selected. Quick movement is important, but the main consideration is security. Avoid known enemy locations and surveillance. When possible, the squadron uses multiple routes to reduce movement time and gain greater flexibility. An element moving on a route blocked or threatened by the enemy shifts to another route. Enemy forces en-

countered during movement to the reconnaissance area are reported and bypassed. A squadron required to reconnoiter several separate areas assigns each armored cavalry troop an area and a route or avenue of march. An air cavalry troop is used as in zone reconnaissance. It may have a reconnaissance objective of its own or it may screen committed troops. A tank company organic to a regimental squadron or attached to a divisional squadron is used as discussed on page 5-54.

A squadron conducting an area reconnaissance forward of friendly lines may be required to remain in the area or to return to friendly lines. A returning squadron should use routes other than those used in movement to the reconnaissance area. This makes it more difficult for the enemy to prepare an ambush. When a squadron is required to

remain in the area it prepares for all-round defense. Combat support and combat service support elements are in the center of the area. The cavalry troops are on the periphery and prepare to defend. If available, a reserve, such as a tank company, is centrally located and prepared to counterattack anywhere in the squadron's area.

ARMORED CAVALRY TROOP AND PLATOON

During movement to an area for reconnaissance, enemy forces encountered are reported and, if possible, bypassed. If the enemy can't be bypassed or quickly destroyed, it may be necessary to abort the mission. The decision is made above troop level. Once in the area, the operation is conducted as a zone reconnaissance. A troop conducting an area reconnaissance forward of friendly lines may be required to remain in the area or return to friendly lines. A troop should complete the mission rapidly and return on a different route to lessen the possibility of being ambushed. When a troop is required to remain in the area, it prepares for all-round defense. Armored cavalry platoons locate on the periphery and prepare to defend. Combat support and combat service support elements are in the center of the area.

Armored Cavalry Troop. A troop assigns platoon zones and missions as in zone reconnaissance. A troop conducting area reconnaissance behind friendly lines conducts a tactical march to the area. A troop, moving alone or with the squadron to reconnoiter an area forward of friendly lines, normally moves as when reconnoitering a single route. This method provides the greatest security and increases the possibility of quickly finding a bypass around an obstacle or enemy force. At other times, when speed is essential and the movement of a platoon along each flank of a route would

significantly increase movement time, the troop moves in column. In such circumstances, the troop commander designates an order of march and a release point. During movement, the lead platoon moves as a platoon conducting route reconnaissance alone. Whenever possible, the platoon uses bounding overwatch between teams. Bounding overwatch is used at all times within the teams. Troop elements trailing the lead platoon use a combination of traveling overwatch and traveling, as required by the situation. Whenever the troop halts, all vehicles clear the route and move to the best cover and concealment adjacent to the route. Each retains its position in the march formation.

When the lead platoon is halted by enemy action or an obstacle, trail platoons are deployed to the flanks to find a bypass and the situation is reported to squadron. As soon as a bypass is located, the troop resumes movement. If the halt is caused by enemy action, the engaged platoon is left in contact until the remainder of the troop clears. As in all contact situations, maximum use is made of supporting fires for suppression and smoke to obscure the enemy's view. Once the remainder of the troop is clear, the engaged platoon breaks contact, under cover of supporting suppressive fires and smoke (mortar, artillery, close air support) and moves to rejoin the troop unless directed otherwise by the squadron.

On reaching the troop designated release point, the platoons move directly to their areas.

Armored Cavalry Platoon. A platoon, upon reaching its assigned area, reconnoiters as during a zone reconnaissance. A platoon moving to or reconnoitering its assigned area forward of friendly lines always moves using bounding overwatch within teams, and whenever possible, between teams. This holds true even when the platoon is returning through an area previously reconnoitered. The reason is that the area is surrounded by enemy territory and could be occupied by enemy elements.

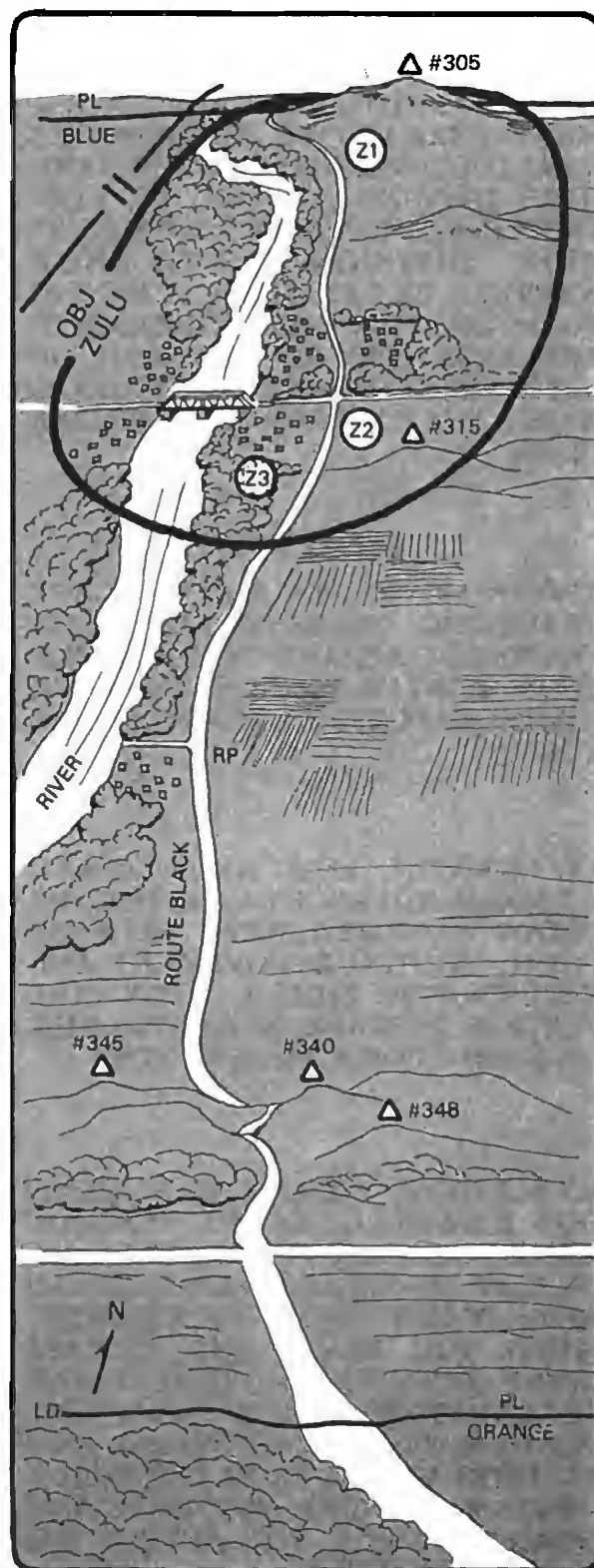
Actions of a troop and platoons conducting an area reconnaissance mission forward of friendly lines are shown here. The mission assigned the troop is part of the squadron's scheme of maneuver preceding forward movement of the main body. The troop commander, following troop leading procedures, gives the following oral order to platoon leaders and other key personnel.

ENEMY SITUATION

THE ENEMY WAS BADLY MAULED WHEN IT ATTACKED OUR DIVISION. A SERIES OF AIR STRIKES AGAINST HIS FOLLOW-ON ECHELONS AND AIR INTERDICTION AGAINST HIS RESERVES AND SUPPLY ROUTES RESULTED IN HIS ATTACK BEING HALTED AND A GENERAL DISENGAGEMENT OF HIS MAIN FORCE UNITS. ENEMY CONTACT IS POSSIBLE.

FRIENDLY SITUATION

THE SITUATION HAS BEEN FLUID THE LAST 6 HOURS. THE DIVISION HAS REGROUPED AND WILL ADVANCE IN A FEW HOURS. ACCORDINGLY, OUR SQUADRON HAS BEEN ORDERED TO CONDUCT A ZONE RECONNAISSANCE TO PREVENT PREMATURE DEPLOYMENT OF THE DIVISION. WE HAVE BEEN GIVEN AN ENGINEER PLATOON.



MISSION

OUR PART OF THE SQUADRON MISSION IS INITIALLY A RAPID MOVEMENT FORWARD TO RECONNOITER AREA ZULU, WHICH IS THIS TOWN AND HIGH GROUND AROUND IT, CONTROLLING THIS MAJOR ROUTE JUNCTION. DIVISION HAS TO KNOW WHETHER THE ENEMY IS PLANNING TO DEFEND IT. WE ARE TO REMAIN IN THE AREA AND BE PREPARED, ON ORDER, TO CONDUCT ZONE RECONNAISSANCE FORWARD OF PHASE LINE BLUE.

EXECUTION

TROOP MOVES ON ROUTE BLACK TRAVELING. ORDER OF MARCH: 1ST PLATOON, COMMAND GROUP, 2D PLATOON, MORTAR SECTION, TROOP CP, ENGINEER PLATOON, TRAINS, 3D PLATOON.

1ST PLATOON. LEAD, AND CROSS LD AT 0400 AS ADVANCE GUARD FOR THE TROOP. ON REACHING RELEASE POINT, CONTINUE MOVEMENT AND RECONNOITER ZULU 1. UPON COMPLETION, PREPARE TO DEFEND HILL 305 FROM ATTACK FROM NORTH.

2D PLATOON. FOLLOW 1ST PLATOON SOP INTERVAL. IF 1ST PLATOON MAKES CONTACT ON ROUTE BLACK, DEPLOY TO THE FLANK PROVIDING BEST COVER AND CONCEALMENT. WHEN YOU REACH THE RELEASE POINT, CONTINUE MOVEMENT AND RECONNOITER ZULU 2. UPON COMPLETION, PREPARE TO DEFEND HILL 315 FROM ATTACK FROM THE NORTHEAST. MAKE SURE YOU HAVE THE ROAD COVERED. YOU BETTER PUT OUT SOME MINES.

TRAINS. FOLLOW ENGINEER PLATOON SOP INTERVAL. IF WE MAKE CONTACT, GET OFF ROUTE BLACK INTO COVER AND CONCEALMENT. ON REACHING RELEASE POINT, FOLLOW 2D PLATOON INTO FIRST COVER AND CONCEALMENT YOU FIND. AS THE SITUATION DEVELOPS, MOVE TO CENTER OF THE AREA.

COMMAND GROUP. THE FO AND I WILL MOVE BEHIND 1ST PLATOON INITIALLY. ON REACHING AREA, WE WILL BE IN VICINITY OF 3D PLATOON.

MORTAR SECTION. FOLLOW 2D PLATOON ON ROUTE BLACK AND OCCUPY POSITION IN SOUTHEASTERN PART OF ZULU 2. SQUADS BE PREPARED TO REVERT TO PLATOON CONTROL.

TROOP CP. FOLLOW MORTAR SECTION INITIALLY. ON REACHING THE AREA, MOVE WITH TRAINS.

3D PLATOON. FOLLOW TRAINS AND PROVIDE OVERWATCH. IN CASE OF CONTACT ON ROUTE BLACK, MOVE IMMEDIATELY TO COVER AND CONCEALMENT AND BE PREPARED TO DEPLOY AROUND EITHER FLANK ON MY ORDER TO FIND A BYPASS OR TO ATTACK. ON REACHING RELEASE POINT, RECONNOITER ZULU 3. CONCENTRATE ON THE TOWN AS SOON AS POSSIBLE. UPON COMPLETION OF RECONNAISSANCE, SET UP AT EDGE

OF TOWN TO COVER THE ROAD JUNCTION AND PREPARE TO DEFEND AGAINST ATTACK FROM THE WEST. PUT SOME MINES ON AND AROUND THE JUNCTION. LET ME KNOW IF THERE ARE ANY CULVERTS OR BRIDGES THE ENGINEERS SHOULD PREPARE FOR DEMOLITIONS.

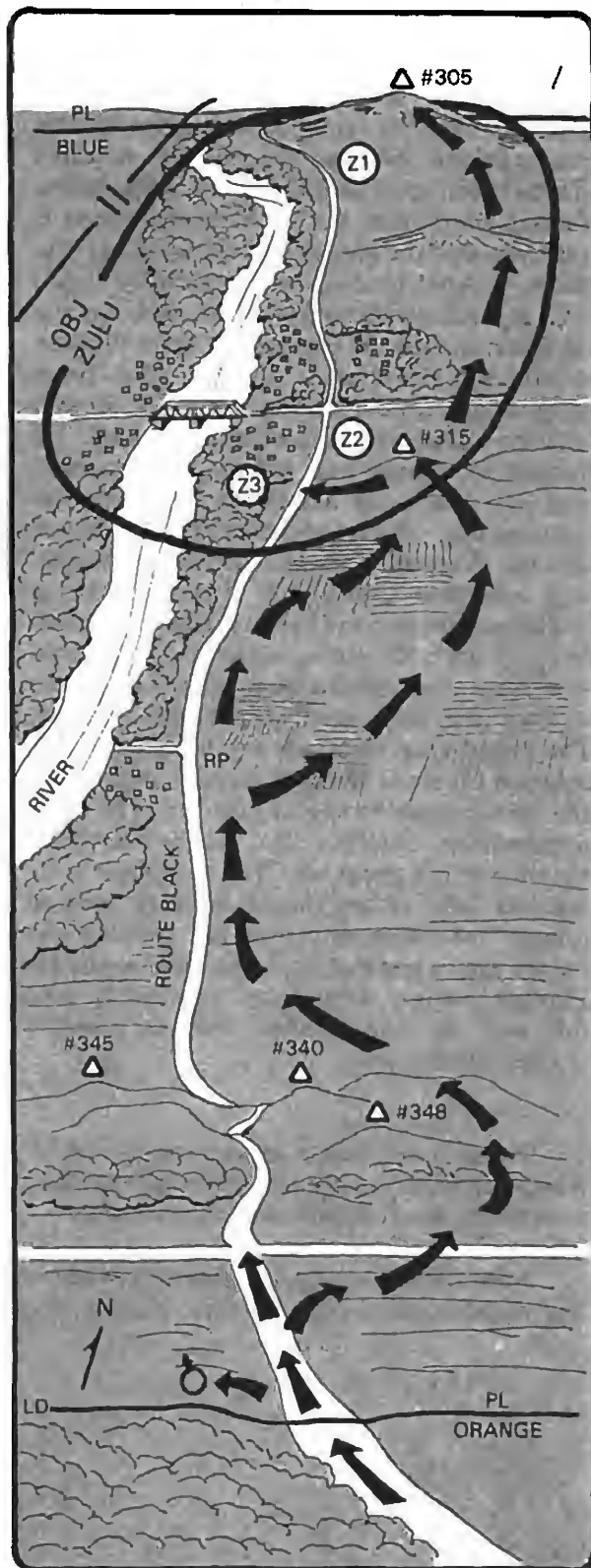
ENGINEER PLATOON. FOLLOW TROOP CP. ON REACHING AREA, REMAIN WITH CP UNTIL I CALL FOR YOU. BE PREPARED TO REMOVE OR CONSTRUCT HASTY OBSTACLES AS THE SITUATION DEVELOPS.

RADAR SECTION. PLACE ONE RADAR TEAM WITH 1ST PLATOON AND ONE RADAR TEAM WITH 3D PLATOON.

Upon receiving this order, subordinate leaders continue their troop leading procedures and issue orders to their men.

At 0400 hours the troop crosses LD in column along route Black with 1st Platoon leading. First Platoon, organized in three teams moves by bounding overwatch as in a route reconnaissance mission. Whenever possible, teams overwatch each other's movement. When this is not possible, bounding overwatch is used within teams. Trail platoons use traveling overwatch and key on movement of the 1st Platoon.

As 1st Platoon nears the bridge at check point 7, automatic weapons fire is received from high ground across the stream. First Platoon immediately returns fire, deploys to cover, and continues actions on contact. The troop commander deploys 2d Platoon to the left to determine if the enemy can be bypassed.



The 1st Platoon leader reports receiving fire from two large-caliber machineguns, an ATGM, and small-caliber, flat-trajectory antitank fire. The troop commander decides not to attack, because the mission requires him to reach area ZULU as soon as possible. Shortly thereafter, the 2d Platoon reports it has bypassed the enemy and returned to route Black without contact in the vicinity of hill 340. By nature of the fire encountered by the 1st Platoon and the success of the 2d Platoon in quickly finding a bypass, the troop commander concludes that he is in contact with an enemy reconnaissance element. He decides to bypass and reports the situation and his course of action to the squadron commander. The troop commander instructs the 1st Platoon leader to maintain contact and suppress the enemy while the troop bypasses and returns to route Black near hill 340. He calls for increased artillery suppressive fires and smoke and tells the mortar section to remain and support 1st Platoon. The remaining elements of the troop move forward on route Black to bypass and follow the tracks made by the 2d Platoon. The troop commander informs the squadron commander of his progress. The squadron commander then orders the air cavalry troop to relieve 1st Platoon. Once air cavalry elements are in contact with the enemy, the 1st Platoon, using bounding overwatch and followed by the mortar section, rapidly rejoins the troop.

Troop A continues movement to the RP where platoons deploy and move by bounding overwatch to reconnoiter assigned areas.

After 2d Platoon reconnoiters forward in the southeastern part of area Zulu 2, the

mortar section occupies a hidden position from which the entire troop can be supported. The troop CP, trains, and supporting engineers move to cover and concealment near hill 315. The radar teams occupy positions in 1st and 3d Platoons' areas and begin surveillance.

After reconnoitering the town, the 3d Platoon reports, reorganizes, and prepares to continue the mission.

As the platoons complete their reconnaissance, the troop commander reports the situation to the squadron commander.

All platoons prepare to defend their assigned areas. Antitank mines carried on each vehicle are hastily emplaced. Platoon leaders ensure their flank elements have interlocking fire with adjacent platoons or that the gaps are covered by OP's (appendix F) and planned mortar or artillery concentrations. The engineer platoon prepares cratering charges in roadways leading into the area, charges to blow the bridge, and demolitions for tree blowdown. The purpose is to impede enemy movement and force targets to halt in the open where they are easier to destroy. This helps reduce an attacking enemy's combat power. *As in all situations, what can be seen can be killed, therefore all elements must be in covered and concealed positions. The combat power of the troop can be significantly increased by the use of supporting artillery, close air support, and air cavalry.*

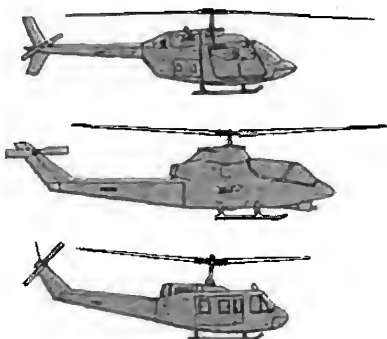
After ensuring the readiness of their platoons to defend, platoon leaders make a map study and plan the reorganization of their platoons for zone reconnaissance forward of phase line Blue.

AIR CAVALRY

Air cavalry units use the movement techniques described in chapter 4.

The basic tactical element of air cavalry

is the air cavalry troop. The combat elements are aeroscouts, aeroweapons, and the recon platoon.



Aeroscouts acquire targets, reconnoiter, and maintain surveillance.

Aeroweapons provide suppressive fires and destroy enemy targets.

Recon Platoon conducts detailed ground reconnaissance and limited offensive and defensive actions.

For reconnaissance, the air cavalry troop may use aerial teams made up of aeroscouts, aeroweapons, and at times, recon squads or it may use platoons. Use of platoons has the advantage of the chain of command. The commander may initially use the aeroscout platoon as organized and retain the aeroweapons and recon platoons as a reaction force. This is often desirable when the situation is fluid and/or characterized by sporadic contact, or contact is not likely. If contact is expected, two platoons, each composed of an aeroscout section and an aeroweapons section, may be formed. The recon platoon is retained as a reaction force. The use of platoons also simplifies command and control at the troop level, particularly during terrain flying.

A platoon's aircraft are seldom all airborne simultaneously. Normally the platoon leader organizes and commits teams (or sections) in a manner to ensure mission continuation while aircraft are rotated for rearming and refueling.

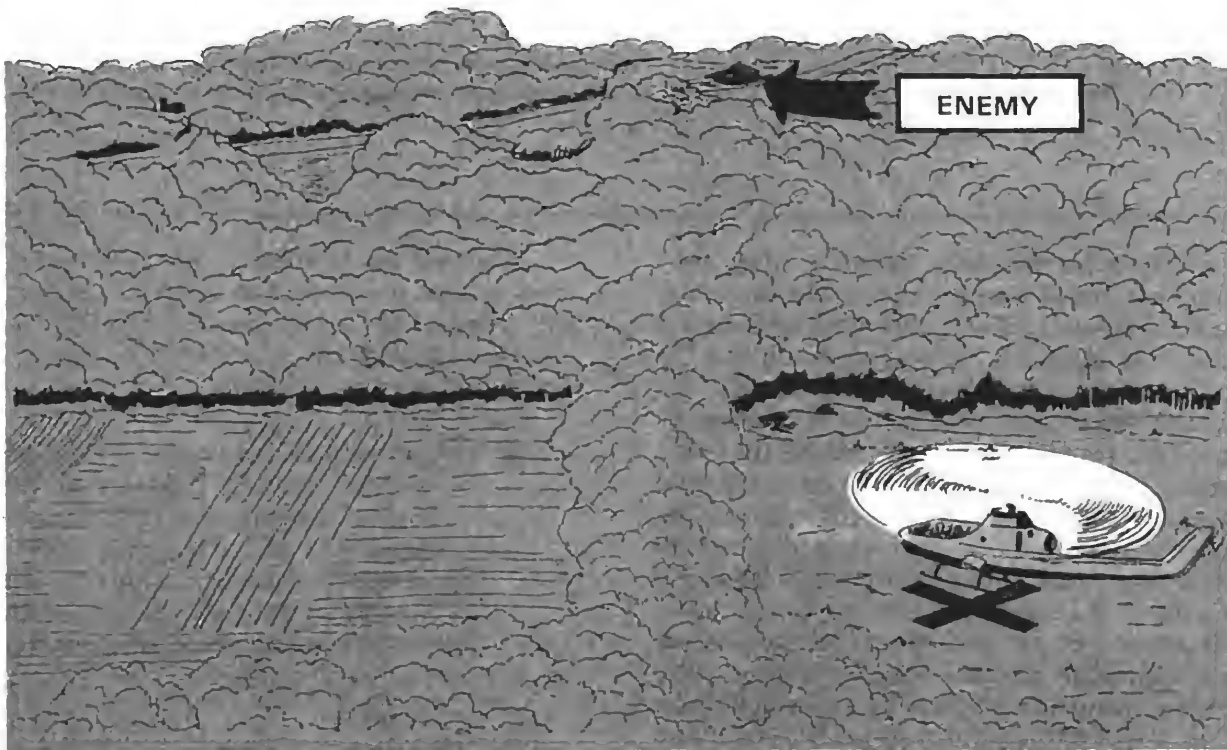
Actions on Contact. Air cavalry follows actions on contact as set forth on page 5-3 (deploy to cover, report, develop the situation, and choose a course of action). In doing this, air cavalry may:

- Place suppressive fire on the enemy to reduce the effectiveness of the enemy's fires and permit the element in contact to seek cover and report. Suppressive fires may come from the aeroscout's automatic weapons, the overwatching aeroweapons helicopter, or field artillery.
- Maintain contact with the enemy by surveillance. This is done when the air cavalry element has not been detected, or when it has moved to cover and is awaiting arrival of other forces to attack the enemy.
- Attack to help develop the situation. Techniques of attacking targets are discussed next.

Attacking Targets. The type of target generally determines which weapons should be used for target destruction. Soft targets (personnel, thin-skinned vehicles, lightly fortified positions) are normally engaged with machineguns, rockets, mortars, or artillery. Hard targets (tanks, light armored vehicles, heavily fortified positions) are normally engaged with rockets, antitank missiles, or close air support. Aeroscouts acquire the majority of targets engaged by air cavalry. The aeroscout after acquiring a target requests and adjusts suppressive fires and/or directs aeroweapons into attack positions for target engagement. The aero-

scout selects primary and alternate attack positions. This is done by reconnoitering likely areas or by standing off and selecting the position. In either case, an aeroweapons attack position should:

- Conceal aircraft from the enemy.
- Be free of dust and debris to prevent compromise by a dust cloud when occupied, and to keep debris from being drawn into the rotor blades.
- Not silhouette the aircraft.
- Take advantage of maximum stand-off ranges for target engagement.



A position which allows a safe touch-down may be desirable. This is not mandatory as the aircraft can hover and should normally occupy an attack position only a short time. In some instances, particularly when engaging armor and mechanized infantry, the situation may change so rapidly

that the aeroweapons may have to hover for a few minutes while the aeroscout revalidates his data. At such times, a momentary touchdown is desirable because hovering among tall trees or in other confined space, such as a defile, increases pilot strain.

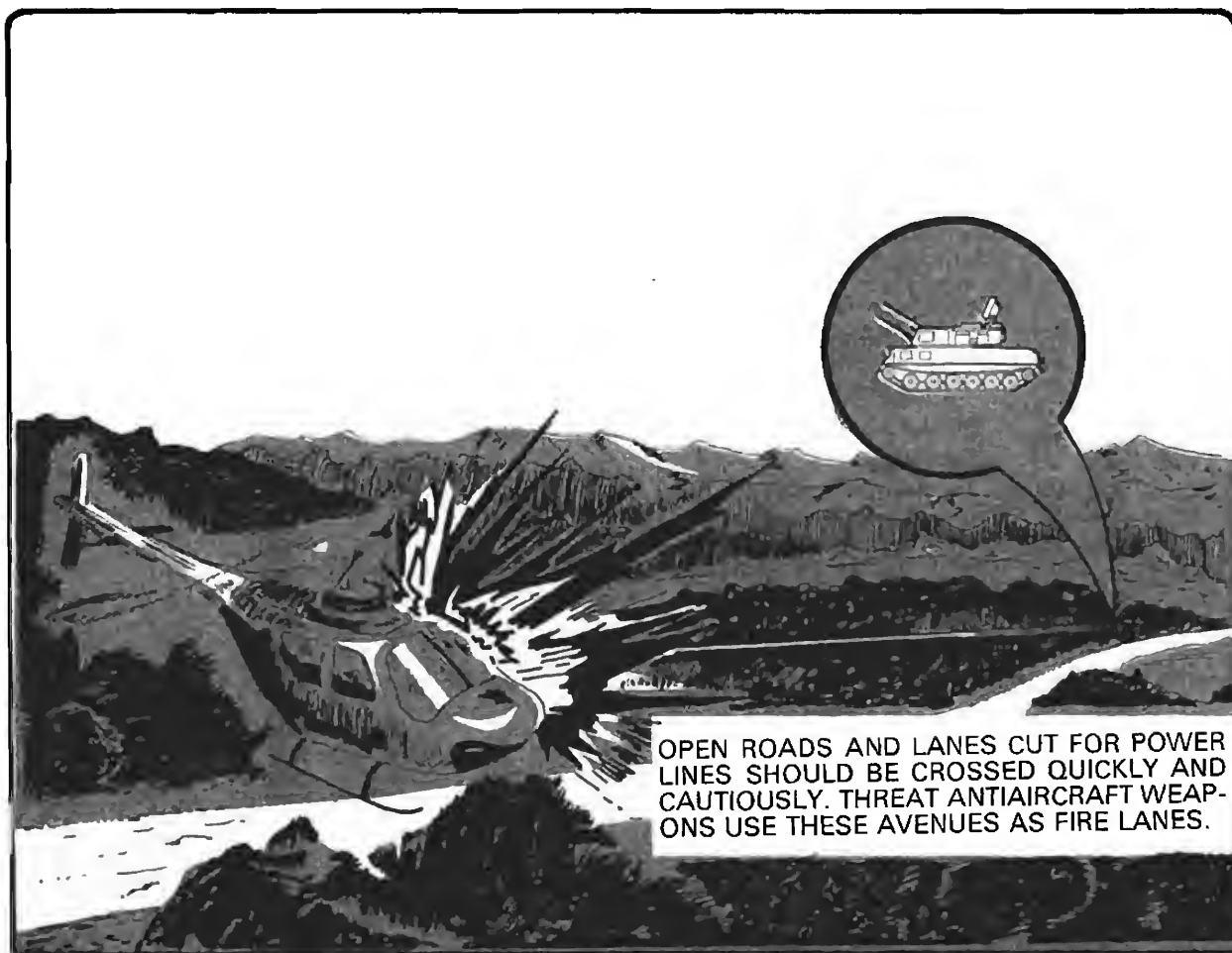
Target Handoff.

ELEMENT	PURPOSE AND DESCRIPTION	EXAMPLE TARGET HAND-OFF	EXAMPLE-TARGET HAND-OFF WITH TARGET DESIGNATION ACQUISITION DEVICES
ALERT, TARGET DESCRIPTION	Alerts antiarmor helicopter(s) identifies the sender and describes the target type, number and activity.	K13A—THIS IS K06A, ESTIMATED TANK COMPANY MOVING WEST, TWO ZSU'S TO REAR OF COMPANY.	K13A—THIS IS K06A, ESTIMATED TANK COMPANY MOVING WEST, TWO ZSU'S TO REAR OF COMPANY.
TARGET LOCATION	As a minimum, the estimated direction in degrees and range from the firing position to the target will be given. In addition, reference from a known or easily identifiable point may be given. Four digit rectangular coordinates may also be used. With target designation/acquisition devices, only a general direction from the firing helicopter to the target array need be given.	120 DEGREES, 2800 METERS, APPROACHING CROSSROADS AT NM3914.	120 DEGREES OR SOUTH-WEST
METHOD OF ATTACK	A concise description of the planned scheme of fire and maneuver for the attack. Prioritize targets.	ON MY COMMAND, ATTACK K24.	ON MY COMMAND/DESIGNATION, ATTACK TARGET WITH ONE MISSILE—SUBSEQUENT TARGETS, FIRE AT WILL.
EXECUTION	Initiates attack.	UNMASK OR ATTACK.	ATTACK or DESIGNATING NOW.
POST-ATTACK ACTION	The scout unmasks to perform an evaluation of the target attack effects and begins planning subsequent engagements. Routes of egress and ingress into new positions are described.	MOVE TO HOLDING AREA 4, BE PREPARED TO ATTACK FROM BATTLE POSITION 21.	



Once handoff is accomplished, the aeroscout moves to where he can best provide early warning and observe the effects of aeroweapons fires. The aeroweapons, on arrival in the attack position, orient on the compass heading to target, partially unmask to acquire the target, unmask and engage the target, and remask and quickly move to the alternate firing position. This reduces the chance that the enemy can destroy the

aeroweapons with artillery. The enemy will have dedicated antiaircraft weapons, such as ZSU's with forward elements. Aircraft which appear silhouetted, appear several times in one place, or remain in an attack position after being detected will likely be destroyed. Threat infantry and armor personnel are trained and eager to engage aircraft with their organic weapons.



However, enemy antiaircraft measures can be countered by flying nap-of-the-earth, delivering suppressive fires on likely positions and against known targets, using smoke to obscure the enemy's vision, and using the cunning of a hunter to out think his

quarry. Air cavalry must remember that the enemy will often advance, firing artillery into areas where attack helicopters may be lurking. When engaged, he will often use smoke, as we do, to obscure the attacker's vision.

At night, an armor battlefield may be illuminated by burning vehicles, towns, and woods. If not, it can be illuminated by artillery, mortar, and Air Force illuminating rounds, or by bouncing searchlights off cloud cover. The thing to remember is to keep the

enemy silhouetted and not yourself. Illumination must be fired well forward of friendly aircraft positions. See FM 17-50, *Attack Helicopter Operations* for additional information on target engagement.

ROUTE RECONNAISSANCE

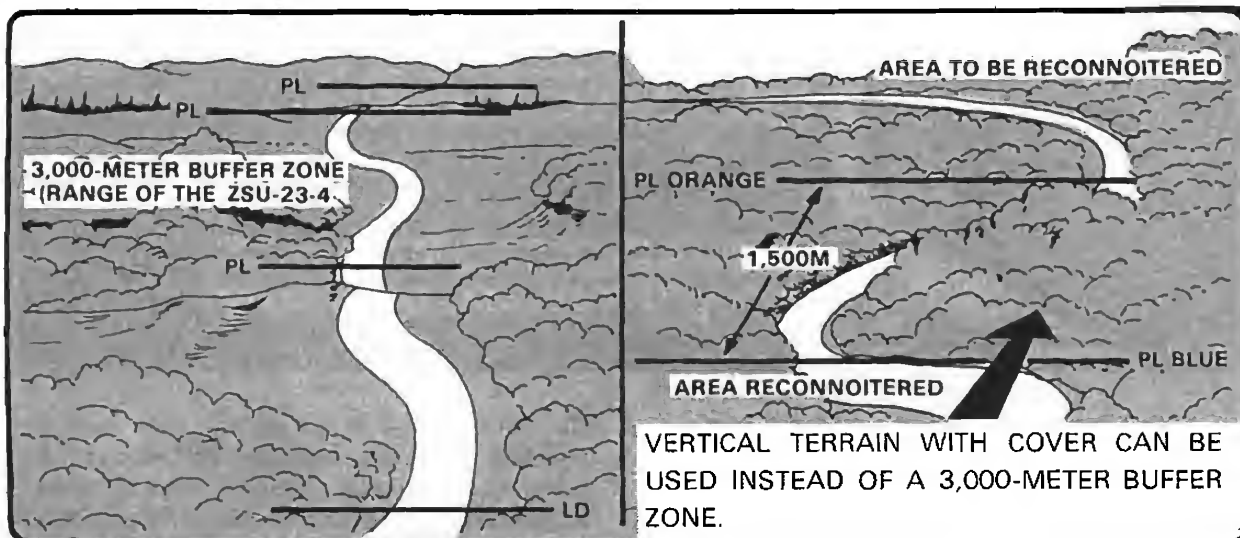
Air Cavalry Squadron. An air cavalry squadron is not assigned route reconnaissance as a primary mission. The squadron obtains route information while conducting zone or area reconnaissance or a security mission.

When route information is required, the squadron obtains the information by assigning the mission to:

- An air cavalry troop as primary

mission or in conjunction with another mission.

- The armored cavalry or cavalry troop.
- An air cavalry troop with operational control of the armored cavalry or cavalry troop, or elements thereof.
- The armored cavalry or cavalry troop with operational control of elements of an air cavalry troop.



Air Cavalry Troop. An air cavalry troop may be assigned route reconnaissance as a primary mission. Due to the speed and mobility of aircraft, this may be a waste of air cavalry assets since route information may be gathered while conducting zone reconnaissance. If enemy contact is not likely, the troop may be assigned several routes. If enemy contact is likely, the troop (not

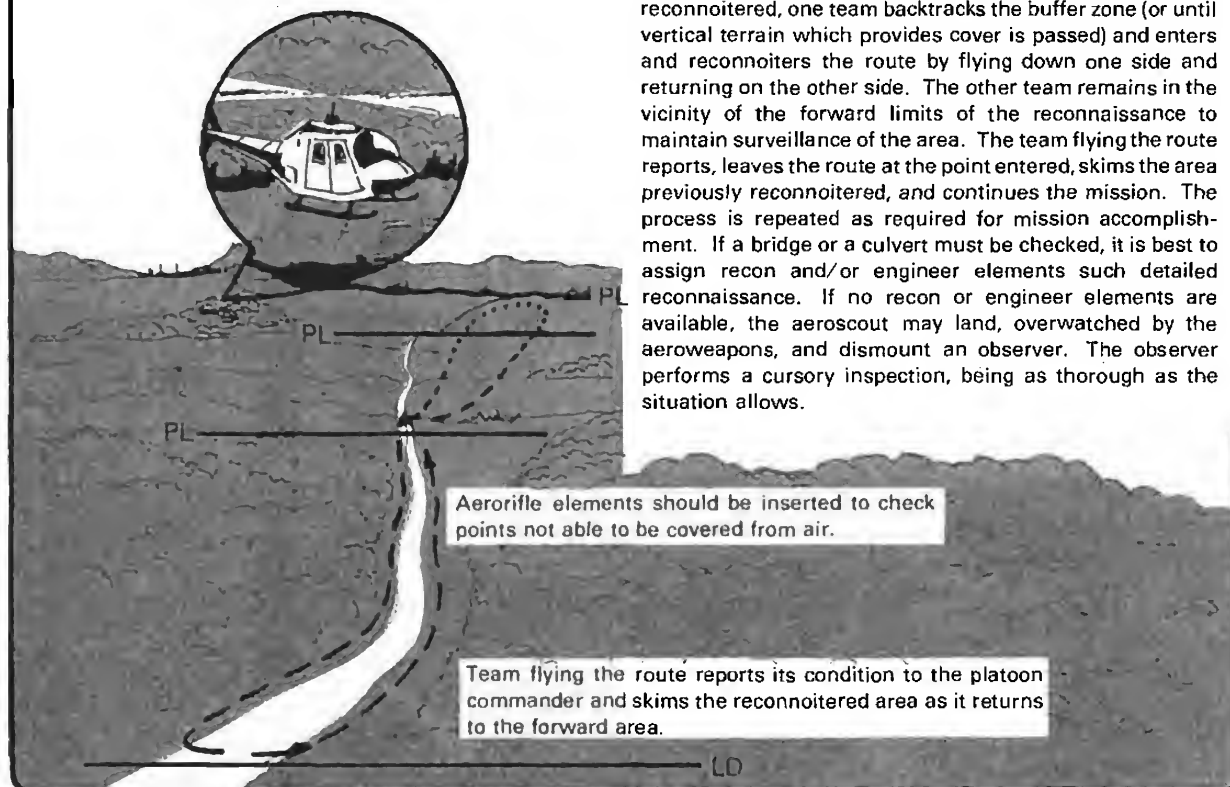
reinforced) should only be assigned one primary route. In that case, the troop is task organized and a minimum of two teams used along the route. The route is the boundary between teams. Each team reconnoiters the terrain on its side out to the distance from which the enemy could use direct fire on the route.

If the route is straight, neither team should fly down or cross over it until a buffer zone of 3,000 previously-reconnoitered meters exists between the aircraft and the unreconnoitered area. This is particularly important

in close terrain because the enemy will often use the road as a fire lane for ZSU-23-4 or other dedicated anti-aircraft weapons (chapter 2). Similarly, it is very dangerous to fly down a straight cut through heavily forested areas.

One team remains in the vicinity of the forward limits as the other team backtracks for a more intense reconnaissance of the road.

After the terrain on either side of the route has been reconnoitered, one team backtracks the buffer zone (or until vertical terrain which provides cover is passed) and enters and reconnoiters the route by flying down one side and returning on the other side. The other team remains in the vicinity of the forward limits of the reconnaissance to maintain surveillance of the area. The team flying the route reports, leaves the route at the point entered, skims the area previously reconnoitered, and continues the mission. The process is repeated as required for mission accomplishment. If a bridge or a culvert must be checked, it is best to assign recon and/or engineer elements such detailed reconnaissance. If no recon or engineer elements are available, the aeroscout may land, overwatched by the aeroweapons, and dismount an observer. The observer performs a cursory inspection, being as thorough as the situation allows.



If the route must be checked for mines, the recon platoon should be used on the route. If contact is expected, the flight of the recon aircraft on or over the route is based on the 3,000-meter buffer zone or terrain cover. Recon squads may be inserted simultaneously at different points to check the route forward to the start point of another squad. The squads remount and the procedure is repeated as required. At such times, the recon aircraft can remain at the squad's dismount point until called forward, or the aircraft of all but the most forward squad can leapfrog and land at the startpoint of the squad in front.

The recon platoon or squad can also be inserted to check bridges, culverts, fords, dense woods, towns, or small areas covered by ground fog, such as a valley. Dismounted reconnaissance of a woods or town is time-consuming. When the recon platoon is reconnoitering a woods or town, an aerial team with the capability of suppressive fires should be airborne. The team must be capable of acquiring and adjusting indirect fire support. It is desirable to have an aeroweapons aircraft in the aerial team to ensure immediate, suppressive fire support.

If the route is long, the teams may have to refuel. This should be done by relieving one team on station at a time. This keeps one team familiar with the area of operation, and keeps continuity between aeroweapons and scouts.

Upon reaching the objective area, the troop may be required to screen the area until relieved, or return to its base area. As in the case of ground cavalry, the initial order should specify what the air cavalry troop is to do after mission completion.

ZONE RECONNAISSANCE

Air Cavalry Squadron. The air cavalry squadron performs zone reconnaissance similar to the armored cavalry squadron.

The squadron may:

- Assign a zone to each air cavalry troop and retain the cavalry troop under squadron control.
- Assign a zone to each air cavalry troop and the cavalry troop.

Air Cavalry Troop. Zone reconnaissance by an air cavalry troop is conducted on a broad front essentially as a movement to contact. The air cavalry troop performs zone reconnaissance with or without the support of ground cavalry units.

An air cavalry troop, after task organizing, assigns team or platoon zones. An air cavalry troop may be provided a ground cavalry platoon for specific missions. Ground cavalry may be assigned an area which is difficult to reconnoiter from the air, such as dense woods. If a route reconnaissance is required as part of the zone reconnaissance, ground cavalry may be assigned a route reconnaissance mission. Ground cavalry may initially be assigned a route or axis of advance and committed by the troop commander as the situation develops.

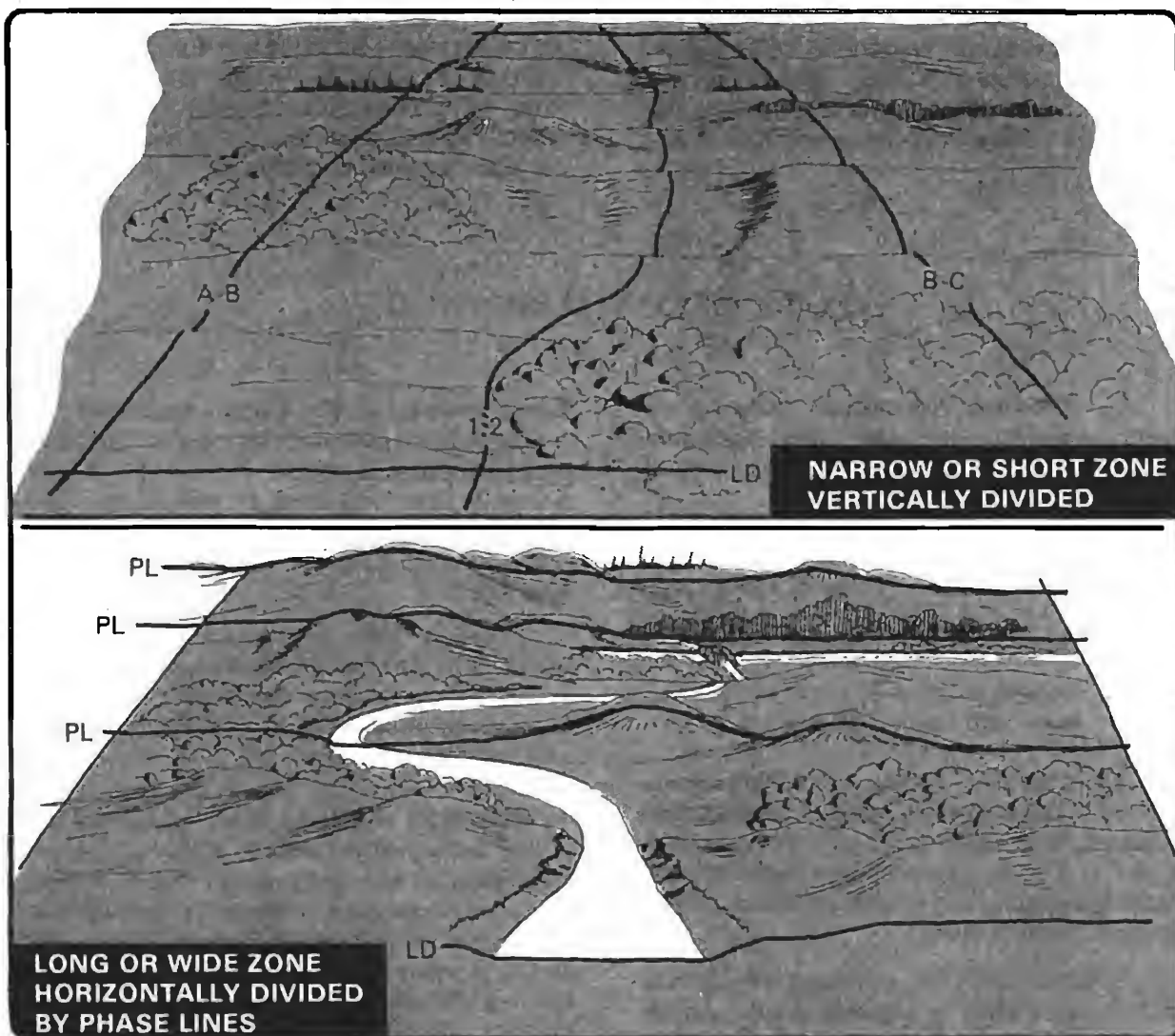
An air cavalry troop conducts a zone reconnaissance by using aerial teams under

direct control of the troop commander or controlled by a platoon commander. In either case, all aerial assets of the troop are normally not airborne at one time. The platoon commander rotates teams for refueling and rearming, as does the troop commander.

When a troop commander uses teams under his direct control, he assigns team zones. When a troop commander uses platoon commanders to control the teams, he assigns platoon zones.

Normally the recon platoon is retained under troop control and is prepared for use anywhere in the troop zone. When a zone contains numerous bridges or key terrain features requiring detailed ground reconnaissance, a recon squad may be used with the team or platoon assigned to that zone, or the platoon may be used intact.

Each zone is reconnoitered in a systematic manner. Just like armored cavalry, air cavalry starts zone reconnaissance at the LD. The terrain and the width of the zones determine how a systematic reconnaissance is conducted. There are essentially two methods of area division. A zone can be divided vertically into platoon and/or team zones. This is appropriate when more than one platoon or team is deployed abreast and the zone is relatively narrow, or a route in close terrain must be reconnoitered. If the



zone is very wide or deep, only one platoon or one team is used. The zones may be divided horizontally into subzones by use of phase lines. This helps to ensure that an enemy force is not inadvertently bypassed.

When enemy contact is made, the situation is developed by bringing all available supporting fires to bear for suppression, and using the aerial firepower available to attack targets. The recon platoon and, when available, the ground cavalry platoon can increase

closing power at a specified point. Like ground cavalry, air cavalry does not bypass enemy forces without permission from the next higher headquarters. A bypassing troop is normally required to maintain surveillance of the bypassed force until relieved by squadron or follow-on forces. This can be done by an aerial team containing aeroweapons, the ground cavalry platoon, or the recon platoon. Do not assign such a mission to the recon platoon on an armor battlefield because a bypassed enemy force may have greater mobility.

When enemy contact is made in one zone, the reconnaissance continues in the other zones. If it is necessary to reinforce elements in contact, the reserve teams at the FARRP are committed. If additional assets are still required, one or more teams from another zone may be used. Before committing these teams, the squadron commander should be informed. Aeroweapons should not be withdrawn from a zone in such a manner that aeroscouts are left alone.

A typical zone reconnaissance by a troop commander who has task organized platoons is depicted below. An example of zone reconnaissance by teams under control of the troop commander is also included.

GENERAL SITUATION

The troop's parent division—the 21st Infantry Division—moves to make contact in zone 120700 October 1980 with three brigades abreast. The mission of the troop's parent squadron is to cross the LD at 120700 October 1980, conduct zone reconnaissance for the division, arrive at phase line Red not later than 121800 October 1980, and screen the division's right flank on order.

SPECIAL SITUATION

Aircraft availability is assumed to be: six aeroscout helicopters, four utility aircraft for the recon platoon, six aeroweapons helicopters (three with aerial rockets, three with aerial antitank missiles), and one utility aircraft for the troop commander.

Because enemy contact is expected and the zone is large, the troop zone is divided into two platoon zones. Each platoon is allocated

a mix of aeroscouts and aeroweapons. The recon platoon is retained under troop control and displaces forward by bounds. The platoon or squads are used for detailed reconnaissance of areas difficult to reconnoiter from the air, such as dense woods.

After following troop leading procedures (chapter 3), the troop commander assembles platoon commanders and key personnel and issues an oral order. Parts of the order are:

MISSION

OUR MISSION IS TO RECONNOITER IN ZONE FROM THE LD TO PHASE LINE RED. WE CROSS THE LD AT 0700 AND MUST REACH PLRED NOT LATER THAN 1800. THEREAFTER, ON ORDER, WE HELP SCREEN THE DIVISION'S RIGHT FLANK.

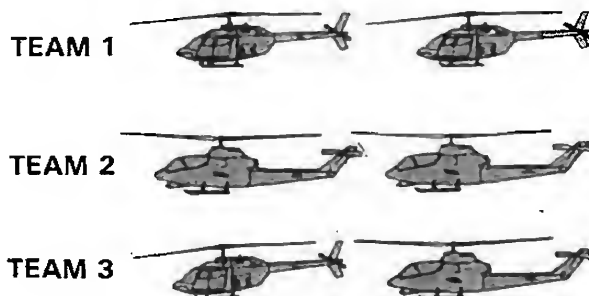
TASK ORGANIZATION

WE WILL TASK ORGANIZE THE AEROScouts AND AEROWEAPONS INTO TWO PROVISIONAL PLATOONS, EACH WITH THREE AERIAL TEAMS, AND THE RECON PLATOON IN RESERVE.

1ST PLATOON

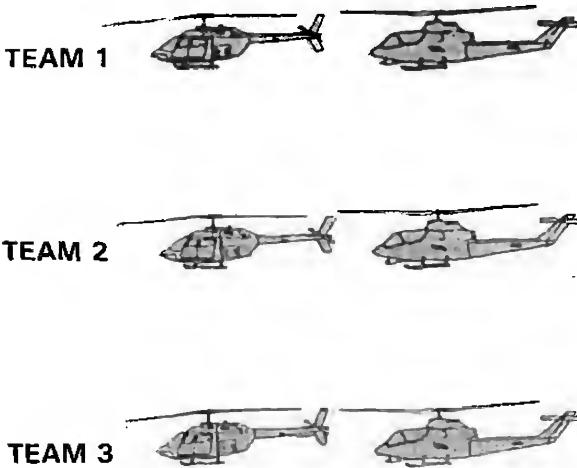
(LED BY THE AEROScout PLATOON COMMANDER)

- 3 AEROScout HELICOPTERS
- 2 AEROWEAPONS HELICOPTERS WITH AERIAL ROCKETS
- 1 AEROWEAPONS HELICOPTER WITH ANTI-TANK AERIAL MISSILES



2D PLATOON
(LED BY THE AEROWEAPONS
PLATOON COMMANDER)

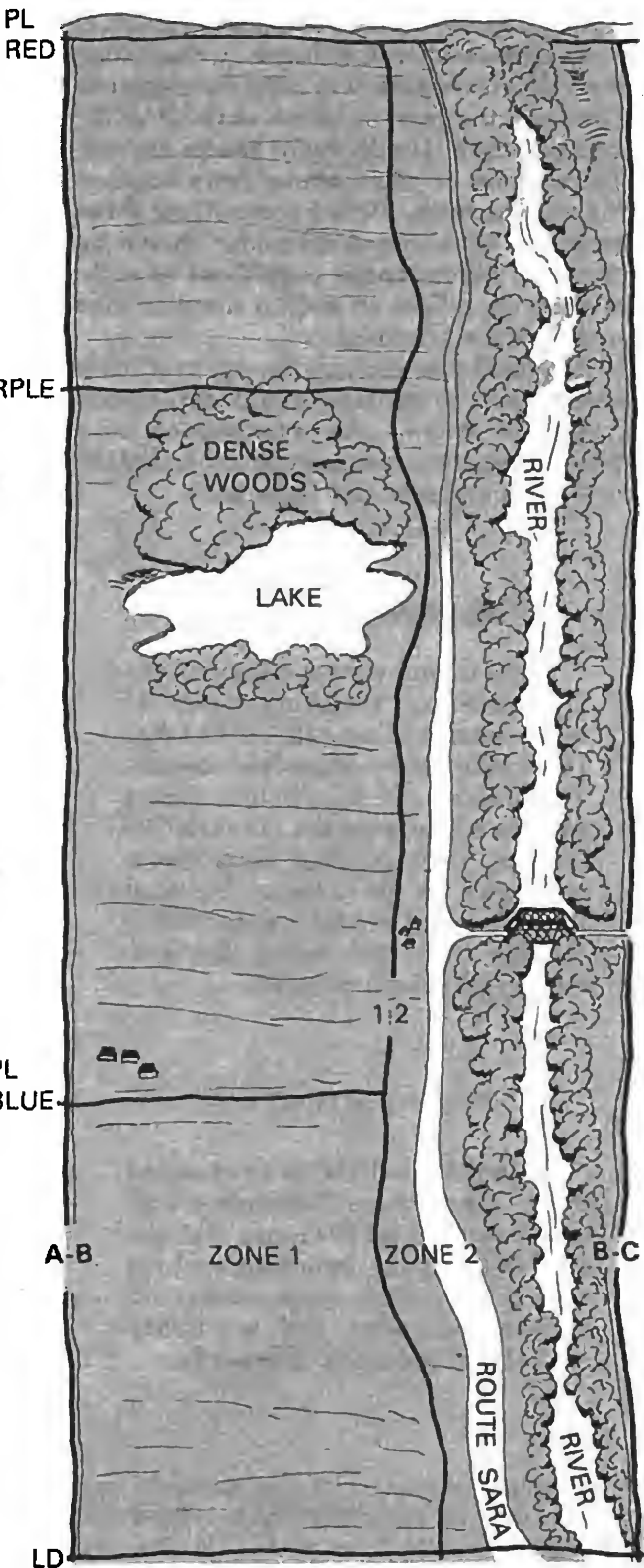
- 3 AEROSCOUT HELICOPTERS
- 1 AEROWEAPONS HELICOPTER WITH AERIAL ROCKETS
- 2 AEROWEAPONS HELICOPTERS WITH ANTITANK AERIAL MISSILES



EXECUTION

WE WILL RECONNOITER IN ZONE WITH 1ST AND 2D PLATOONS ABREAST. RECON PLATOON WILL DISPLACE FORWARD BY BOUNDS IN CENTER OF THE TROOP ZONE.

1ST PLATOON. RECONNOITER ZONE 1. BE PREPARED TO ASSIST 2D PLATOON IF CONTACT DEVELOPS IN ZONE 2.



2D PLATOON. RECONNOITER ZONE 2. BE PREPARED TO ASSIST 1ST PLATOON IF CONTACT DEVELOPS IN ZONE 1.

RECON PLATOON, TROOP RESERVE. MOVE BY BOUNDS IN ZONE 2. BE PREPARED TO CHECK BRIDGES, WOODS, AND ROUTES FOR MINES IN EITHER ZONE.

SERVICE PLATOON. ESTABLISH A FARRP WITH THE TROOP CP. DISPLACE AS DIRECTED BY THE OPERATIONS OFFICER.

COORDINATING INSTRUCTIONS
ESCAPE AND EVASION, TROOP SOP.

COMMAND AND SIGNAL

TROOP CP FOLLOW RECON PLATOON IN ZONE 2. I WILL REMAIN WITH THE CP INITIALLY. THE TIME IS 1905. ANY QUESTIONS?

The 1st and 2d Platoon commanders analyze the factors of METT before determining their task organization and methods of accomplishing the mission, refueling, and rearming. There are many ways. Two approaches frequently used are:

- The 1st Platoon commander forms Team 1 with two aeroscout helicopters, Team 2 with two aeroweapons helicopters (one with rockets and one with antitank missiles), and Team 3 with one aeroscout helicopter and one aeroweapons helicopter (with rockets). The platoon commander normally flies with another pilot in

an aeroscout helicopter in Team 1. The platoon commander divides his zone horizontally into smaller zones. Team 1 conducts the reconnaissance overwatched by Team 2. Team 3 remains at the FARRP, initially as the platoon relief team, and relieves teams on station to refuel and rearm. Team 2 moves as directed by the platoon commander and stays generally 500m to the rear of Team 1. Both Team 1 and Team 2 keep abreast of each other's location by monitoring the platoon UHF radio net. All spot reports are sent to the platoon commander on UHF. The platoon commander consolidates and submits reports to the troop CP on the Troop Command Net (FM). Team 3 replaces Team 1 or Team 2 on station as directed by the platoon commander. If enemy contact has not been made, the platoon commander's helicopter is the first to refuel. Refueling and relief on station is handled at the direction of the platoon commander. If the situation is critical, the platoon commander should transfer to the relieving aeroscout helicopter, either at the FARRP or at a point enroute.

- The 2d Platoon commander forms three teams. Team 1 has one aeroscout helicopter and one aeroweapons helicopter (with rockets), Team 2 has one aeroscout helicopter and one aeroweapons helicopter (with antitank missiles), Team 3 has one aeroscout helicopter and one aeroweapons helicopter (with antitank missiles). The platoon commander flies with another pilot in the aeroscout helicopter of Team 1. The

platoon zone, because of route SARA, is divided vertically into subzones with Teams 1 and 2 reconnoitering. Team 3 initially remains at the FARRP. The platoon commander refuels and rearms by relieving teams on station.

Given the same general situation and aircraft availability as above and a narrower troop zone, an air cavalry troop commander may elect to use teams directly under his control. Such a situation is depicted below. In this situation, the troop commander has elected to form six teams, each consisting of an aeroscout helicopter and an aeroweapons helicopter. He has divided the troop zone into three team zones. His plan is to assign two teams to each zone and initially retain the recon platoon under his control. One team reconnoiters while the other refuels, rearms, and remains on alert at the FARRP. The recon platoon displaces forward by bounds in

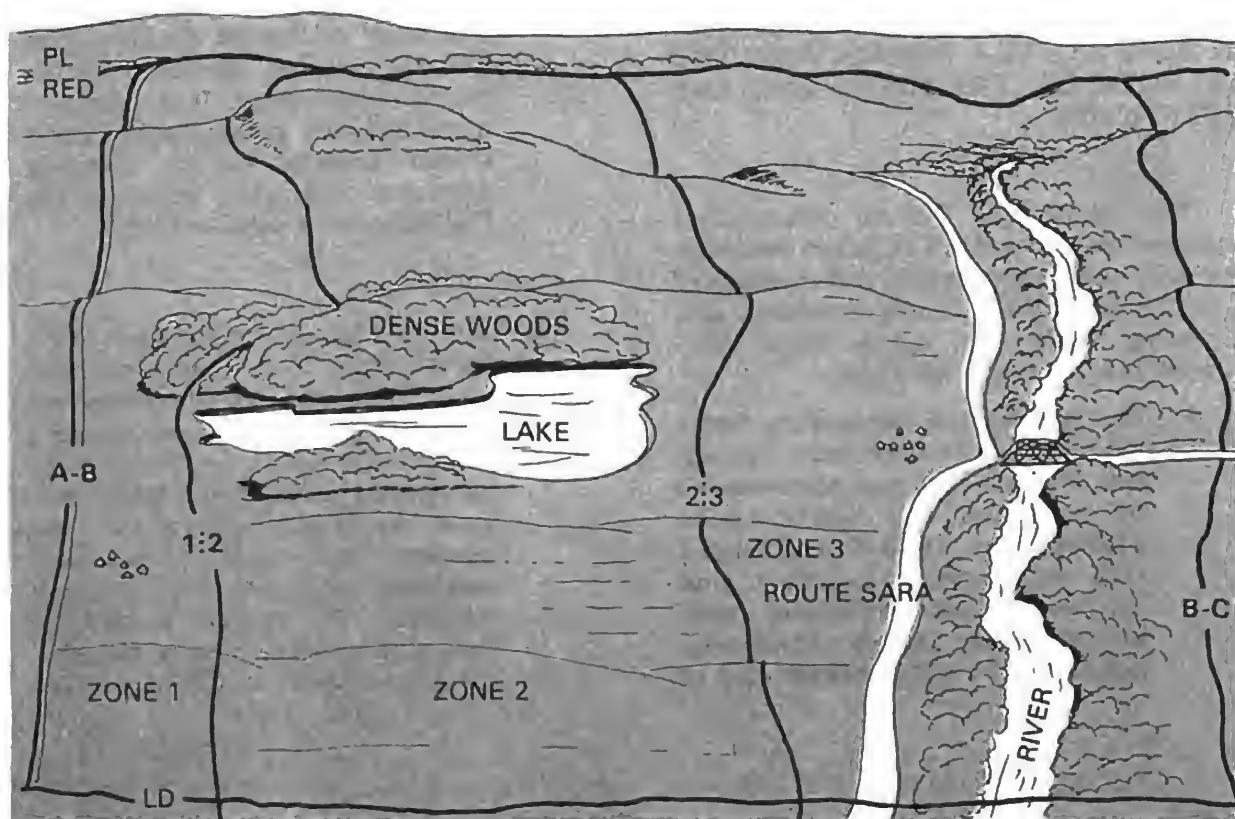
the center of the troop's zone. After following the troop leading procedure, the troop commander assembles his pilots and other key personnel and issues the following oral order.

MISSION

OUR MISSION IS TO RECONNOITER IN ZONE FROM THE LD TO PHASE LINE RED. WE CROSS THE LD AT 0700 AND MUST REACH PL RED NOT LATER THAN 1800. THEREAFTER, ON ORDER WE HELP SCREEN THE DIVISION'S RIGHT FLANK.

TASK ORGANIZATION

WE WILL ORGANIZE INTO SIX TEAMS. TEAMS 1, 3, AND 5 WILL EACH HAVE ONE AEROSCOUT HELICOPTER AND ONE AEROWEAPONS HELICOPTER WITH ROCKETS.



TEAMS 2, 4, AND 6 WILL EACH HAVE ONE AEROSCOPT HELICOPTER AND ONE AEROWEAPONS HELICOPTER WITH ANTITANK MISSILES.

RECON PLATOON INITIALLY INTACT.

EXECUTION

WE WILL RECONNOITER IN ZONE WITH THREE TEAMS ABREAST. TWO TEAMS WILL BE ASSIGNED TO EACH ZONE. ONLY ONE TEAM AT A TIME WILL BE ON STATION. RECON PLATOON WILL DISPLACE FORWARD BY BOUNDS IN CENTER OF TROOP'S ZONE.

RECON PLATOON, TROOP RESERVE, FOLLOW BY BOUNDS IN ZONE 2. BE PREPARED TO CHECK BRIDGES AND WOODS IN ZONES 1 AND 2 AND PARTS OF ROUTE SARA IN ZONE 3.

TEAM 1 AND TEAM 2. RECONNOITER ZONE 1.

TEAM 3 AND TEAM 4. RECONNOITER ZONE 2.

TEAM 5 AND TEAM 6. RECONNOITER ZONE 3.

SERVICE PLATOON. ESTABLISH A FARRP WITH THE TROOP CP. DISPLACE AS DIRECTED BY THE OPERATIONS OFFICER.

ODD NUMBER TEAMS AIRBORNE FIRST. ESCAPE AND EVASION, TROOP SOP.

COMMAND AND SIGNAL

TROOP CP. FOLLOW RECON PLATOON IN ZONE 2. I WILL REMAIN WITH THE CP INITIALLY. THE TIME IS 1905. ANY QUESTIONS?

Teams are relieved as directed by the operations officer or Troop SOP. Whenever possible, the relief is accomplished on station to ensure a team is continually reconnoitering in each zone. Teams waiting to go on station or relieve other teams must keep abreast of the tactical situation. This can be accomplished by the team leaders being in the troop CP where they can receive last-minute instructions, or by using the aeroscout section's portable radios.

AREA RECONNAISSANCE

Air Cavalry Squadron. An air cavalry squadron conducts area reconnaissance the same way it conducts zone reconnaissance, with the exception of movement to and from the area. The squadron may reconnoiter one large area or several dispersed areas concurrently, or it may assign such missions to one or more troops. It may perform an area reconnaissance forward of friendly lines when the situation is fluid or an open or lightly defended flank exists. The depth of an area reconnaissance behind enemy lines should normally be limited by the range of supporting artillery, or the availability of close air support. Close air support aircraft can extend the depth of the reconnaissance by providing constant air cover. The purpose of this air cover is twofold: air defense and immediate suppressive fire.

A squadron commander with an area reconnaissance mission studies the factors of METT. He then decides the force needed and whether to move in a single corridor or several corridors. Emphasis is normally placed on reaching the area quickly. Enemy situations encountered enroute are developed only enough to ensure that reconnoitering elements can bypass and continue to the reconnaissance objective. Different corridors should be used for the return flight to

make it more difficult for the enemy to ambush returning aircraft. Flight corridors to and from the area are selected after an analysis of the enemy situation and terrain. Corridors:

- Avoid known or suspected enemy locations.
- Use available cover and concealment.
- Permit reaching the area quickly.

Flight to the area is accomplished using terrain flight and movement techniques. Enemy forces encountered enroute are reported and, if possible, bypassed. The organic cavalry troop or supporting ground forces may be used as in other reconnaissance operations.

Air cavalry units, unlike armored cavalry units, do not remain in an area behind enemy lines. The squadron's armored cavalry or cavalry troop and the recon platoons may be used to form a provisional task force which can remain in and defend an area. In this case, the actions of the unit are the same as any other armored cavalry troop conducting area reconnaissance.

Air Cavalry Troop. The armored cavalry troop discussion on page 5-36 is applicable to the air cavalry troop. The air cavalry troop may commit a provisional platoon or a team to reconnoiter an area behind enemy lines when the situation is fluid or an open or lightly defended flank exists. Such a mission must be completed rapidly, and passage in and out of friendly lines should be carefully coordinated.

TANK COMPANY OF THE REGIMENTAL ARMORED CAVALRY SQUADRON

During reconnaissance operations, the tank company provides additional combat power for early development of the situation. The tank company is *not* ideally suited to reconnaissance. It is specifically designed as a striking force. Thus, all or part of the company, is normally better used as a reserve to rapidly strike and crush enemy forces to help the squadron maintain momentum, and to help prevent cavalry troops from becoming decisively engaged. The factors of METT determine the physical location and the mission of the tank company. If the terrain in the squadron area is especially rough and does not permit easy lateral movement, tank platoons may be attached to troops to give quick armor response to enemy actions. Similarly, if the enemy is expected to be especially strong in one or more areas,

platoons may be attached to troops responsible for these areas. If terrain permits easy lateral movement, and/or the enemy is expected to be evenly deployed throughout the squadron area, the tank company may be centrally located behind the troops, ready to react as a unit in any troop area. In an extremely broad squadron open area, such as a desert or great plains area, the tank company may be given a zone, route, or area of responsibility. In this cases, the troops and tank company should be cross-attached to give tank elements to the troops and reconnaissance elements to the tank company.

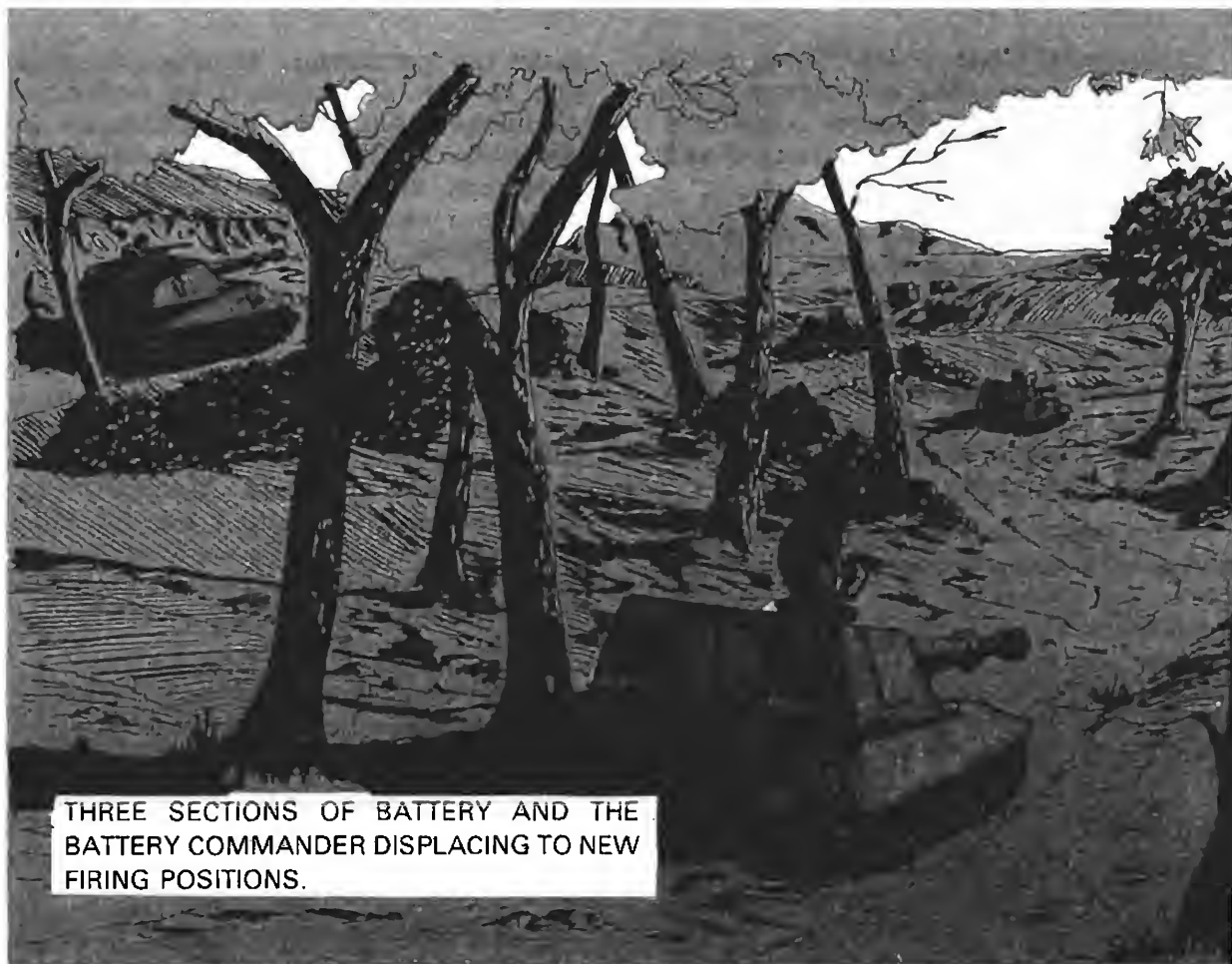
For additional information on how tank companies and platoons move and fight, see FM 71-1, *The Tank and Mechanized Infantry Company Team*.

HOWITZER BATTERY OF THE REGIMENTAL ARMORED CAVALRY SQUADRON

During reconnaissance operations, the squadron's artillery battery is usually used as a unit. This adds to efficient round-the-clock operations and ease of massing fires. Sometimes, it may be necessary to split the battery. This is usually not desirable as it compounds the problems of fire direction, maintenance support, resupply, and command and control. However, a battery may be split so that all squadron elements are within a field artillery range fan. The battery may frequently displace by platoons during reconnaissance operations to give continuous fire support. The battery should normally be

centrally positioned well forward within the squadron area. It will usually be given a direct support mission with priority of fires established by the squadron commander. During squadron movements (for example, the squadron moves from the assembly area to an area reconnaissance) the battery should be placed in the line of march far enough forward to provide fires for the leading elements of the squadron.

FM 6-20 contains fire planning, tactics, and techniques for field artillery.



THREE SECTIONS OF BATTERY AND THE BATTERY COMMANDER DISPLACING TO NEW FIRING POSITIONS.

Reconnaissance instructions are normally issued orally as an operation order. Changes are in the form of fragmentary orders (FRAGO's). Generally, time available prevents preparation and issuance of a written order before starting an operation. In this case, the written order may be prepared after the fact for historical purposes.

If the regiment is to conduct, or requires a subordinate unit to conduct, two or more reconnaissance missions concurrently, it must set priorities. These priorities are determined by the relative importance of information sought and time available.

Reconnaissance orders should ensure a coordinated effort, but should not unnecessarily restrict subordinate commanders. When possible, squadron commanders and commanders of units reporting to or supporting the regiment should be assembled to receive the order. This face-to-face meeting helps ensure that schemes of maneuver and fire support are understood. After reconnaissance begins, FRAGO's are issued as necessary. These orders are usually transmitted by radio, but may also be sent in writing by messenger or radio teletypewriter. Messengers at the regimental level often use aircraft.

ARMORED AND AIR CAVALRY SQUADRONS

Command and control considerations during reconnaissance operations at squadron level are essentially the same as at

regiment. The difference is in the scope of command and level of operation.

ARMORED CAVALRY, AIR CAVALRY, AND CAVALRY TROOPS

During reconnaissance operations, a troop commander operates from his battle-field vehicle.

A troop commander controls his unit through the executive officer and platoon leaders. At times, an air cavalry troop commander may elect to directly control teams.

A reconnaissance mission is normally assigned to the troop as a unit with specified control measures. When more than one mission is assigned, a priority is stated. A troop commander assigns tasks to platoons. Instructions to platoons include:

- Available information on the enemy and friendly troops in the area of operation.
- Plans of the higher commander, when appropriate.
- Specific information desired.

- Zone, area, route, or axis of advance.
- When, where, and how information is to be required.
- Time of departure.
- Phase lines, control points, reconnaissance objectives, and, when required, the times they are to be reached.
- Locations and procedures for refueling/rearming, when required.
- Time mission is to be completed.
- Action after the mission is completed.

A troop commander issues orders orally to his platoon or section/team leaders. After reconnaissance begins, additional instructions are provided by radio, messenger, or by the troop commander in person.

ARMORED CAVALRY, CAVALRY, AND AIR CAVALRY PLATOONS

A reconnaissance mission is assigned to a platoon by the parent troop. After receiving the order, the platoon leader issues orders to his platoon. After the reconnaissance starts, additional instructions are disseminated by radio, messenger, or the platoon leader in person. The platoon leader moves and locates where he can best control the team.

An armored cavalry or cavalry platoon uses hand-and-arm (or a flag as an extension of the arm) signals as often as possible to reduce radio transmissions. This is done more frequently within teams than between them.

An air cavalry platoon or team must rely primarily on radio. Well developed standing operating procedures and the use of the same personalities together as frequently as possible reduce need for radio transmissions.

SUMMARY

The purpose of reconnaissance is to gather information upon which commanders may base plans, decisions, and orders.

The three types of reconnaissance are route, zone, and area. A *route reconnaissance* mission is concerned with a specific route and all adjacent terrain from which the enemy could influence movement along that route. *Zone reconnaissance* is the reconnaissance of all natural and man-made features within specified boundaries. An *area reconnaissance* is conducted to obtain information about a specified area; for example, a town, a ridge, or a woods.

Cavalry conducts reconnaissance according to five fundamentals:

- Orient on the location or movement of the reconnaissance objective.
- Report all information rapidly and accurately.
- Retain freedom to maneuver.
- Gain and maintain enemy contact.
- Develop the situation rapidly.

SECURITY OPERATIONS

The purpose of security operations is to provide reaction time, maneuver space, and information about the enemy to the main body. Security includes all measures taken to prevent observation, annoyance, surprise, espionage, or sabotage. Aggressive and bold reconnaissance to reduce the unknowns in terrain and enemy situation is an integral part of security.

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When. Cavalry units conduct security operations when directed.

Why. Cavalry units conducting security operations provide information about the size, composition, location, and direction of the movement of enemy forces, and provide reaction time and maneuver space so that the main body can be warned, prepared, and properly deployed to engage the enemy. Cavalry units are specially organized, equipped, and trained to conduct security operations over wide and deep areas, thus permitting the main body commander to retain tanks, mechanized infantry, and other combat units in the main body, ready to concentrate at the place and time of decision.

What. Security operations include:

- 1 Screening Operations.
- 2 Guard Operations.
- 3 Covering Force Operations.

1 Screen: Maintain surveillance and provide early warning by maintaining contact with enemy forces encountered. A screening force must impede and harass the enemy by organic and supporting fires, and within its capability, must destroy or repel enemy patrols.

2 Guard (Protect): Prevent enemy ground observation, direct fire, and surprise attack. A guard force destroys, stops, or delays the enemy within its capability.

3 Cover: Operate apart from the main body to intercept, engage, deceive, disorganize, and destroy enemy forces before they can attack or halt the main body.

Where. Security forces may operate to the front, flanks, or rear of a moving or stationary main body.

Operation and Orientation. The type of operation and the orientation with regard to the main body are determined by:

- **Mission:** Usually stated as cover, guard (protect), or screen.
- **Enemy:** Most dangerous direction (front, flank, or rear) with respect to the main body.
- **Terrain:** Extent of space available.
- **Troops and Equipment Available:** Number and size of cavalry units available to the commander.
- **Time and Space Required.**

Air Cavalry. As in reconnaissance operations, air cavalry is integrated with ground cavalry during security operations. Most often, air cavalry screens and acts as a rapid reaction force. It may be used as an advance guard when the situation is fluid. Such a mission is conducted in the same manner as a route reconnaissance when the situation is fluid. Such a mission is conducted in the same manner as a route reconnaissance when enemy contact is likely (page 5-45). Air cavalry does not conduct a flank or rear guard. It does not conduct a covering force mission. It usually reconnoiters and screens forward and/or to the flanks of ground cavalry during movement to contact. After a line of contact has develop-

ed, air cavalry may reconnoiter and screen to the flanks, maintain contact with the main body, and help ensure the ground cavalry is not infiltrated. It can be used as a rapid reaction force to engage enemy elements with its long range standoff aerial fires and all available suppressive fire. This helps gain time for armored cavalry and other maneuver elements to occupy defensive positions or to maneuver to attack. The flexibility and mobility of an air cavalry troop permits its mission to be rapidly changed. These factors, coupled with long range standoff aerial firepower and the ability to use all available suppressive fires, frequently result in it being used to temporarily reinforce a ground maneuver unit by fire. This is done until the situation can be stabilized or other ground maneuver unit(s) can react. During a flank guard or covering force operation, air cavalry may also conduct zone reconnaissance between the main body and its parent unit's axis of advance. It may be reinforced with ground maneuver elements to facilitate clearing the zone. During security operations, air cavalry may be:

- Assigned a specific mission and retained under the control of its parent unit.
- Reinforced with ground maneuver elements.
- Required to place teams under operational control (OPCON) of squadrons or troop-size units.

FUNDAMENTALS

Cavalry units conduct security operations according to five fundamentals:

Orient on the Main Body. A security force operates between the main body and known or suspected enemy units. The security force commander must know the scheme of maneuver of the main body, and maneuver to remain between it and the enemy.

Perform Continuous Reconnaissance. A security force performs continuous aggressive reconnaissance to gain all possible information about terrain and enemy. Such information is vital to the main body commander since it represents two of the four factors of METT (mission, enemy, terrain, and troops available).

Provide Early and Accurate Warning. Early warning of enemy activity, including accurate reports of size, composition, location and movement, provide the main body commander with the time and information needed to retain initiative or to choose the time and place to concentrate to defeat that enemy.

Provide Reaction Time and Maneuver Space. A security force operates as far from the main body as possible, consistent with the factors of METT. It fights as necessary to ensure adequate time and space for main body response to the Threat.

Maintain Enemy Contact. Contact once gained should be maintained to ensure continuous information about enemy activity. If contact is lost, it must be regained unless the enemy is withdrawing from the area of operations and the security force is ordered not to follow.

THE THREAT

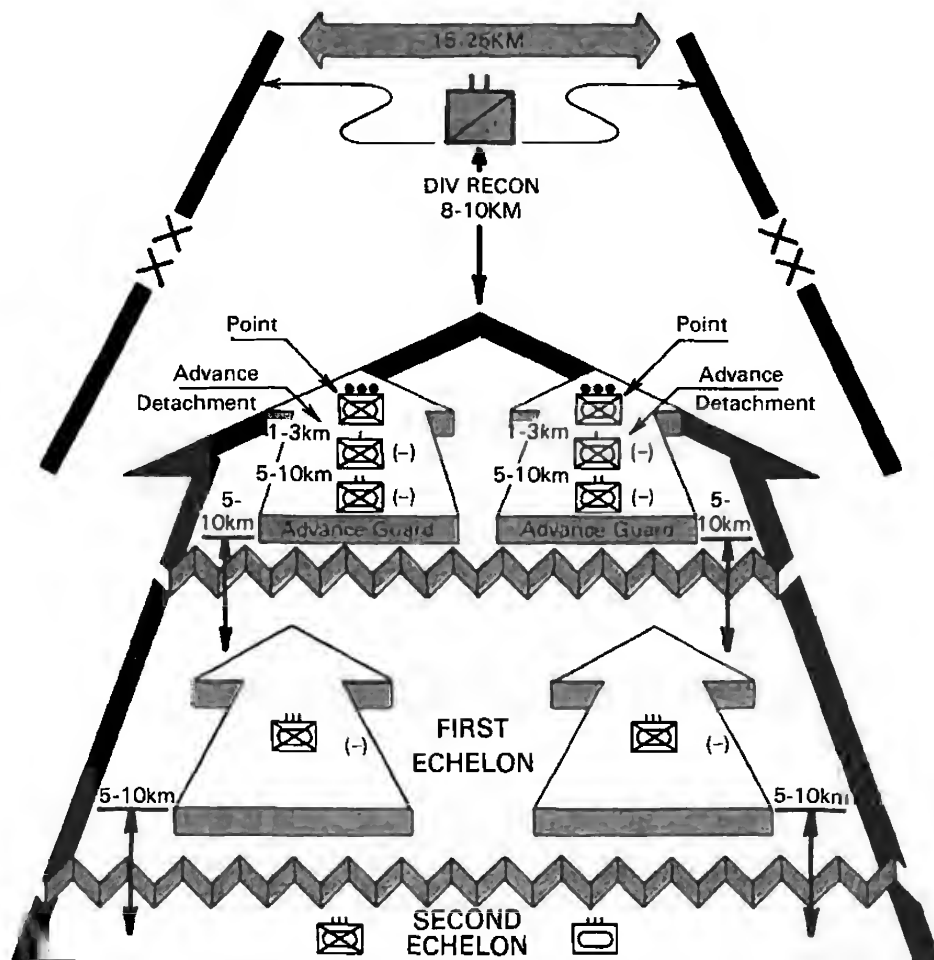
Cavalry conducting security operations will usually find an enemy force which is moving to contact or providing security for a larger defending force.

THREAT OFFENSIVE DOCTRINE

Enemy forces intend to advance rapidly, locate gaps and weak points in a defense, mass quickly, and penetrate to deep objectives. If the situation is not already developed or attacking forces are not in contact with defenders, the enemy will move to contact.

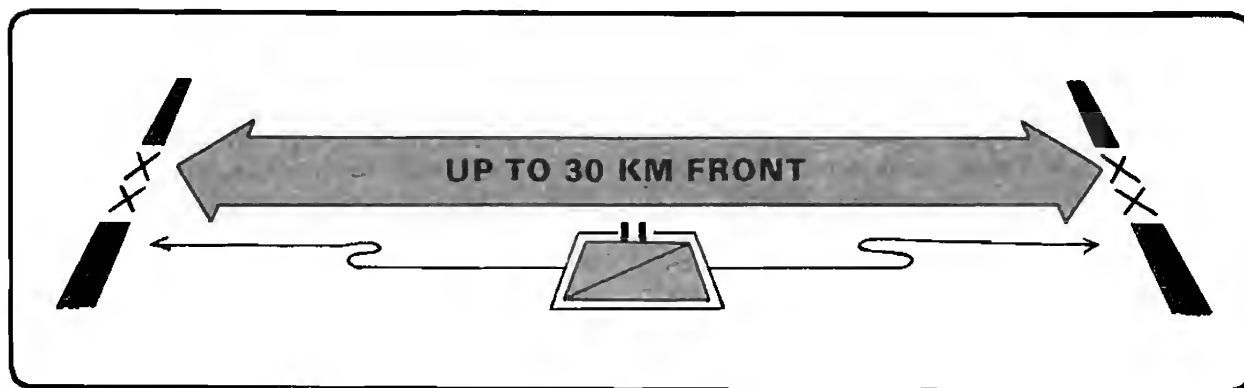
THREAT ORGANIZATION FOR MOVEMENT TO CONTACT

Both the motorized rifle and tank divisions usually move to contact on a wide (up to 30km) front. A Threat division moves to contact with a reconnaissance screen, an advance guard, and first and second echelons.



NOTE: Regiments do not always use a reconnaissance screen and advance guard when moving behind those of the division.

Reconnaissance Screen. US cavalry units will first encounter the Threat reconnaissance screen. It operates 8-10km forward of the division's advance guard point platoon. It consists of the division's reconnaissance battalion reinforced with artillery forward observers, engineers, and chemical and radiological reconnaissance squads.



The reconnaissance battalion is organized and equipped with a:

- Headquarters and service section.
- Light tank company (PT-76) with two tank platoons, each with three PT-76's. There is also one PT-76 in the company headquarters.
- Scout car company with 12 BRDM's and 20 motorcycles.
- Radar reconnaissance company with four intercept and direction finding platoons and a processing station.
- Long range reconnaissance company with five long range reconnaissance teams.

The battalion reconnoiters forward of the division advance guard and first echelon regiments, orienting on the division's primary avenue of approach. It operates across the entire division front, however, it uses most of its assets to clear routes to be used by first echelon regiments. To accomplish its mission, the reconnaissance battalion task organizes the light tank company and the scout car company into reconnaissance groups and patrols:

- **Reconnaissance group** has three light amphibious tanks (PT-76's), four BRDM's, three motorcycles, one chemical and radiological reconnaissance squad, and one engineer squad. Within the reconnaissance group an advance guard consisting of one PT-76, one BRDM, and one motorcycle may operate 4-7km ahead of the remainder of the group.
- **Reconnaissance patrol** has one light amphibious tank (PT-76), two BRDM's, and one motorcycle.

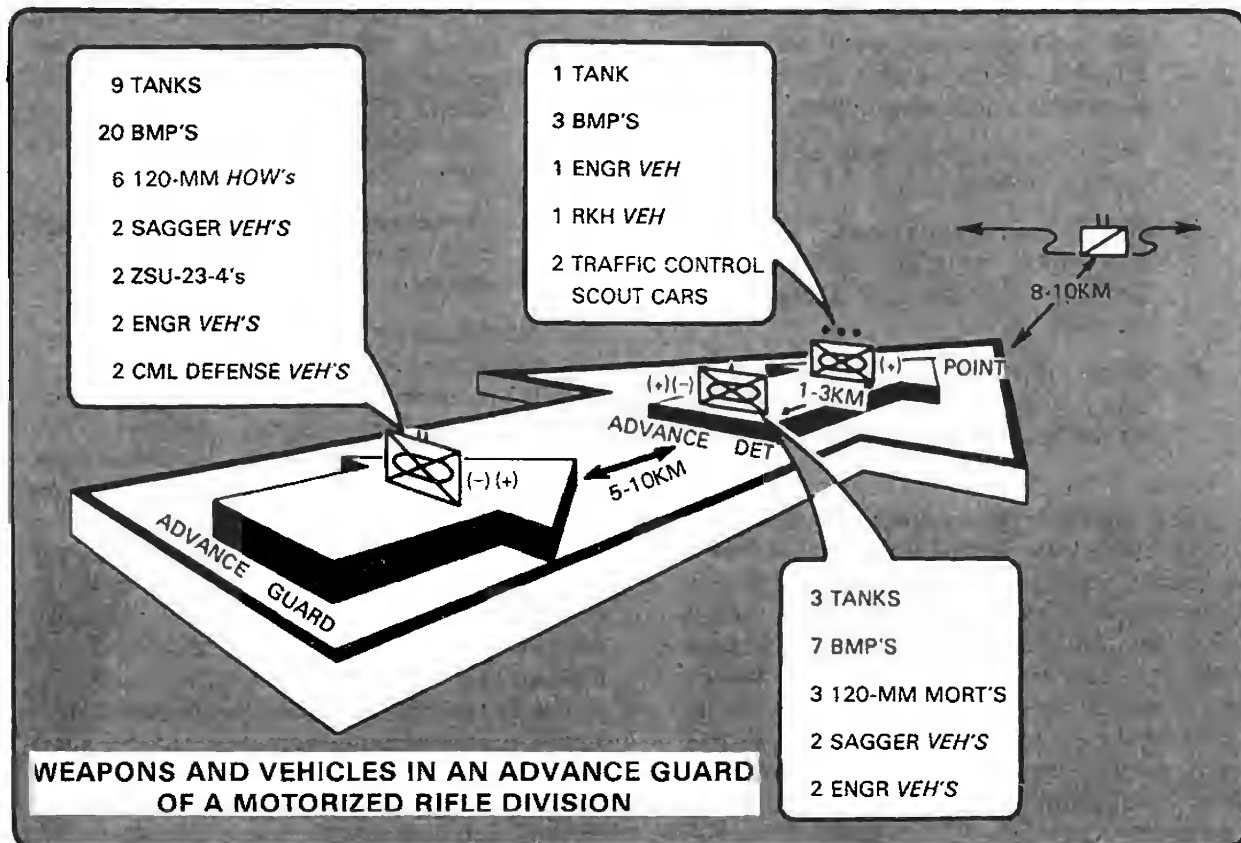
The reconnaissance groups and patrols are temporary tactical subunits formed for a specific mission. The reconnaissance company or a reinforced platoon thereof is the normal base for a reconnaissance group. Similarly, a reinforced squad or platoon forms the base for a reconnaissance patrol. The radio/radio technical reconnaissance company is directly behind the combat units of the first echelon regiments. The company conducts radio interception and direction finding as part of the reconnaissance mission of the battalion. The long range reconnaissance company's long range patrols may infiltrate by air as far as 100km to our rear. Their mission is to locate our reserves and nuclear delivery units.

One reconnaissance group with several subordinate reconnaissance patrols is allocated to each divisional route of advance. Each group is assigned successive objectives along its route. As each objective is secured, a reconnaissance base is established. Reconnaissance patrols are then deployed forward of the base toward the next objective. The patrols reconnoiter by rapid and frequent movement from one vantage point to another. They cross open areas at high speeds, and close and broken terrain by bounds. OP's are established at vantage points. When contact is gained, the reconnaissance group uses feints and flanking maneuvers to determine the defender's strength, composition, and disposition. The reconnaissance group reports and attempts to bypass the defender's locations and continue along its prescribed route of advance. Bypassed positions are saturated with artillery fire and attacked by the advance guard. If contact is not intense, a reconnaissance

group may be left in contact to create a diversion while the division's main elements bypass. The basic purpose of the enemy's reconnaissance is to find the defender's flanks and weak areas so the main body may quickly bypass pockets of resistance to continue the mission.

Advance Guard of Threat Division.

Moving closely behind the reconnaissance battalion is the advance guard. Its mission is to respond to contacts made by the reconnaissance screen. In either type of division the advance guard is a reinforced tank battalion. This battalion is reinforced with a motorized rifle company, artillery, engineers, and air defense artillery. It destroys opposition encountered by the reconnaissance battalion. It is centrally located and moves to contact in column. The tank battalion's column formation provides both depth and the ability to quickly react in any direction.

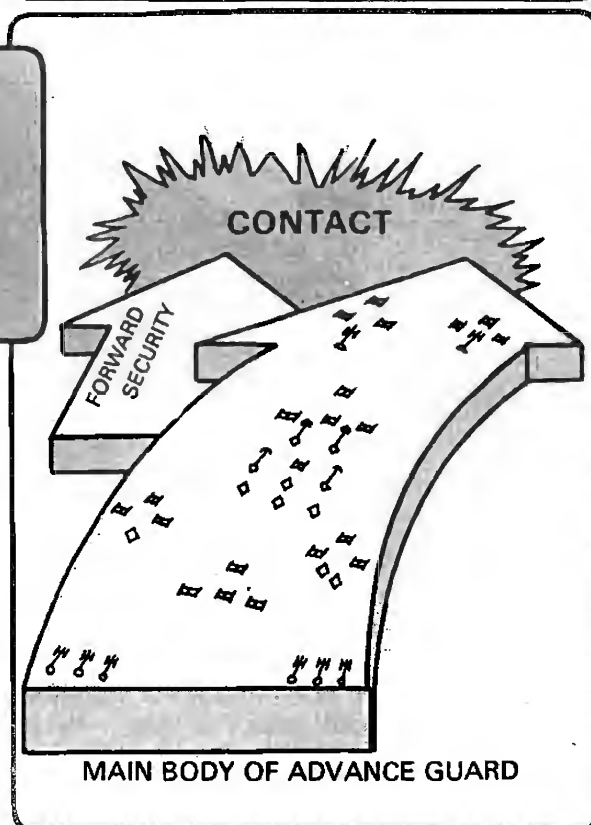
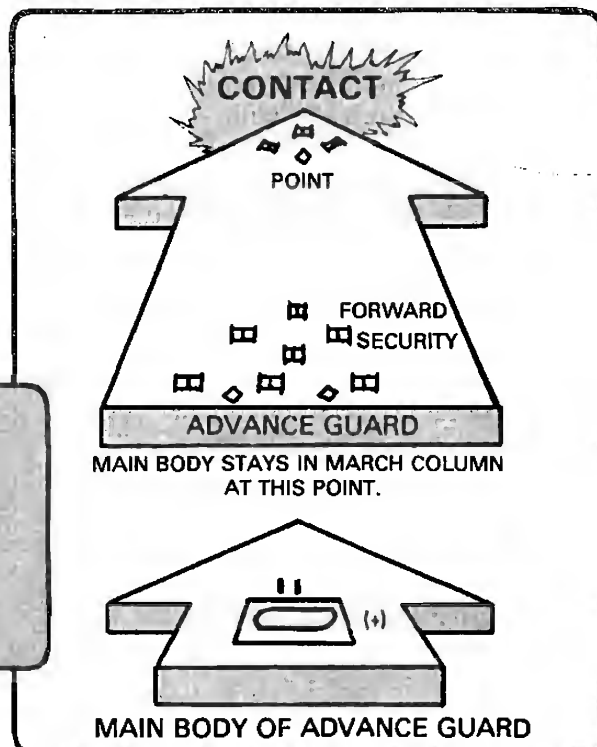
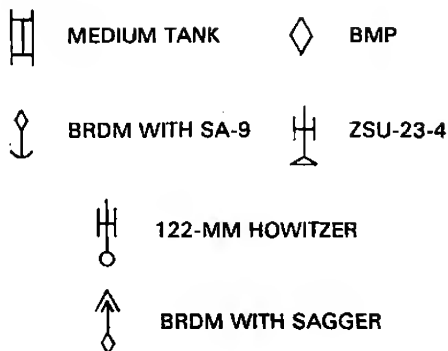


Advance guard tactics are to rapidly build up an overwhelming tank force to push through opposition or cover the maneuver of the division. The buildup is by stages. The first stage is a reinforced platoon, followed by its parent reinforced company, in turn followed by the remainder of the reinforced battalion. Therefore:

- Once the reconnaissance battalion has located or been halted by opposition, the point platoon of the advance guard attacks to destroy that force.
- If the point platoon is halted, the platoon's parent company (forward security for the advance guard) attacks.

- If the lead company is halted, then the remainder of the battalion attacks from the march column.
- If the battalion is unsuccessful, it establishes a hasty defense as close to the defender as possible and awaits arrival of the first echelon motorized rifle regiments.

LEGEND:



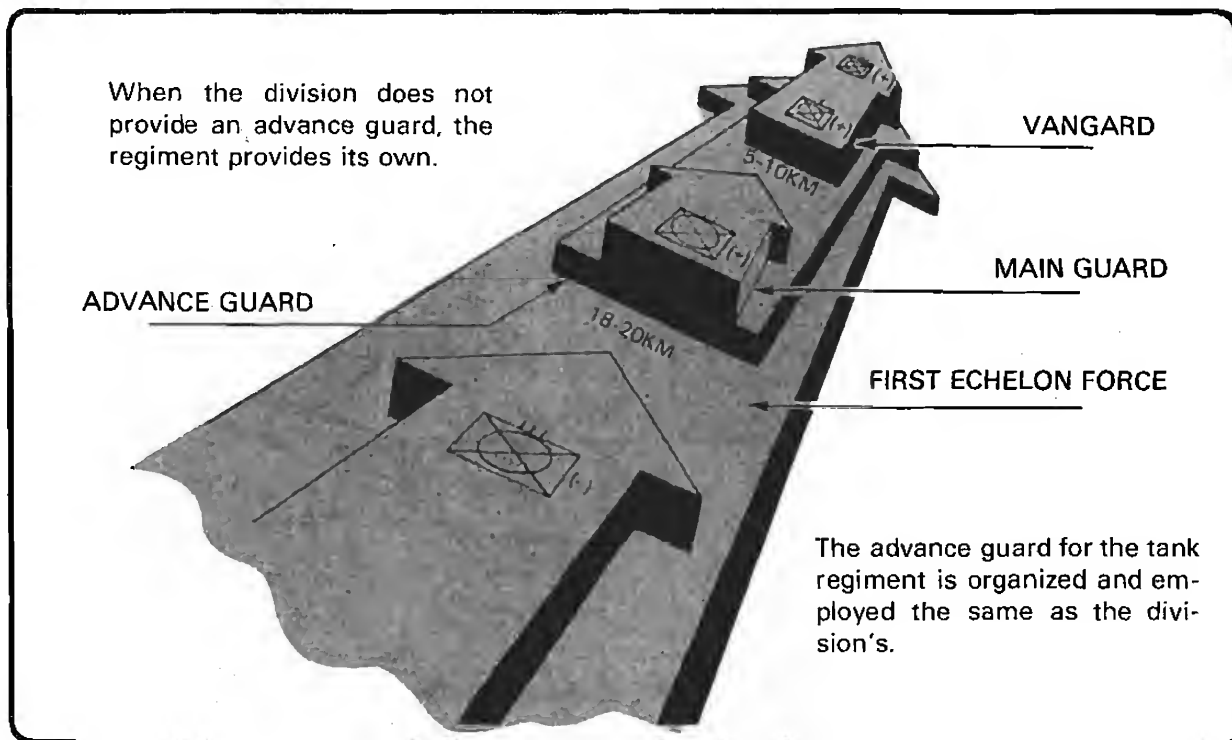
First Echelon Forces. The first echelon of a motorized rifle division normally consists of two motorized regiments moving abreast. In a tank division, its two tank regiments may move abreast. The first echelon contains most of a division's combat power. Each regiment moves in column. If the division *does not* have a reconnaissance screen, each regiment forms its own. Screening is done by the regimental reconnaissance company.

The regimental reconnaissance company consists of:

- A headquarters section.
- One tank platoon with three PT-76's.
- One amphibious armored reconnaissance vehicle platoon with three BRDM's.

- One motorcycle platoon with three motorcycles.
- One chemical reconnaissance platoon with three BRDM-2 RKh's (chemical reconnaissance vehicles).

This company reconnoiters forward of the regimental advance guard along the regiment's primary route of advance. Its organization for combat and tactics parallel those of the reconnaissance battalion (page 6-5). If the division does have a reconnaissance screen and advance guard, the regimental reconnaissance company moves as part of the main body of the regiment in anticipation of early commitment when the regiment is deployed. Reconnaissance patrols from the company may screen an exposed flank along the regiment's route of advance.



In the absence of a divisional advance guard, the regiment uses its own. In a motorized rifle regiment, the guard is a reinforced motorized rifle battalion subdivided into an advanced detachment which

furnishes a point and a main guard. Its mission and tactics correspond to the advance guard mission given the tank battalion (page 6-6).

The advanced detachment provides a point which normally consists of a motorized rifle platoon reinforced with an engineer squad and a main battle tank. Its mission corresponds to that of the leading tank platoon of a tank battalion operating as an advance guard (page 6-6).

The advanced detachment is a motorized company reinforced with a tank platoon, an engineer platoon, and other combat support units as appropriate. It is the parent company of the point platoon. Its mission corresponds to that of the leading tank company of the tank battalion (page 6-6).

The main guard contains the remaining elements of the advance guard battalion. It moves in column with most of its combat power and combat support well forward. Combat service support elements are within the column. When required, a motorized rifle company (-) may operate as both a flank and a rear guard.

The advance guard attacks from march column to destroy opposition interfering with the motorized rifle regiment's advance. If unsuccessful, it will assume a hasty defense

to cover the regiment's deployment.

The advance guard of a tank regiment is organized and used in the same manner as the advance guard for the motorized rifle division (page 6-6).

Second Echelon Forces. The second echelon of a motorized rifle or tank division consists of the remaining tank and motorized regiments. The second echelon maintains the momentum of the attack by:

- Reinforcing the first echelon.
- Conducting a flank attack.
- Reducing pockets of resistance.

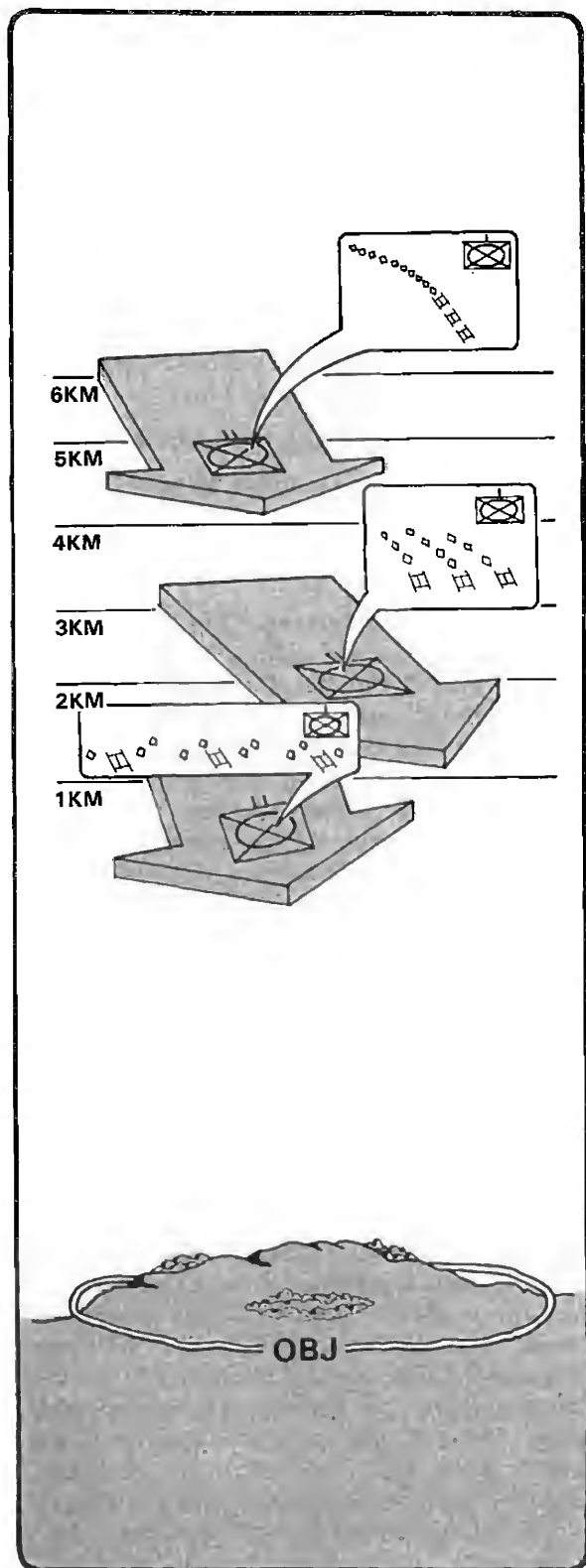
Division Reserves. The reserves of either the motorized rifle division or tank division could consist of two or three tank battalions or one or two motorized rifle battalions plus engineers and antitank elements for a motorized rifle division. The reserves follow closely behind the second echelon regiments and are ready to exploit any success. The reserves are also prepared to repel enemy counterattacks, and to repulse airborne landings. They also guard the flanks of the advance.

EMPLOYMENT OF THE FIRST AND SECOND ECHELONS IN THE OFFENSE

If the enemy advance guard is unable to overcome opposition, the division first echelon attacks from the march column. Second echelon forces are used as discussed above. The attack of a motorized rifle division's first echelon is similar, except that most of the force will be main battle tanks.

A regimental attack is normally organized in two echelons. The first echelon is that part of the combat unit's assigned responsi-

bility for execution of the primary mission. The regiment's second echelon forces follow the same route of advance as the first echelon forces, but have secondary or followup missions which may be changed as the situation develops. Emphasis is on combined arms. Even in motorized rifle regiments the thrust is on the maximum use of tanks. Within a regiment, ADA priority is assigned to the defense of command posts and maneuver units. Each maneuver battalion will



have at least two ZSU-23-4's or SA-9's. At times the ZSU-23-4's will operate in a ground role against targets varying from tanks to dismounted infantry. Threat forces are well trained in fighting at night and during periods of reduced visibility. However, objectives in night attacks will not be as deep as those in daylight operations.

Conduct of the Attack. Threat battalions may attack from the march column if the defense is weak. First echelon battalions attack toward prominent terrain features, but actual emphasis is on penetrating our defenses by finding and pushing through weakly defended areas or bypassing our strongpoints, rather than on capturing terrain objectives.

To speed forward movement, a Threat battalion deploys in stages:

- Threat battalions deploy into company columns 4-6km from the defender's positions.
- Threat companies deploy into platoon columns 1-3km from the defender's positions.
- Threat platoons normally attempt to deploy into battle formation 1km or less from the defender's position. Maintaining movement in columns increases the speed of advance. Assault begins at 2km or less depending on terrain and the defending force.

The regiment's second echelon is 3-6km behind the first echelon. If the first echelon is slowed or unable to overcome opposition, the second echelon attacks to attempt to push through or outflank the defender. If the regiment's momentum is still slowed, the division's second echelon is committed to the attack.

THREAT DEFENSIVE DOCTRINE

Threat forces defend only when necessary. Advancing units which are forced to halt initially adopt a hasty defense with vehicles in the closest covered positions. These positions are usually very close to the opposing force positions. If required to

defend for longer periods, the enemy withdraws some tanks to positions in depth while reinforcing forward units with antitank weapons. Details of how the enemy defends are found in chapter 5.

SCREEN

The purpose of a screen is to provide early warning and counter enemy reconnaissance activities.

Tasks of a screening force are to:

- Provide early warning of enemy approach.
- Gain and maintain enemy contact and report enemy activity.
- Destroy or repel enemy reconnaissance units.
- Impede and harass the enemy with long range fires.

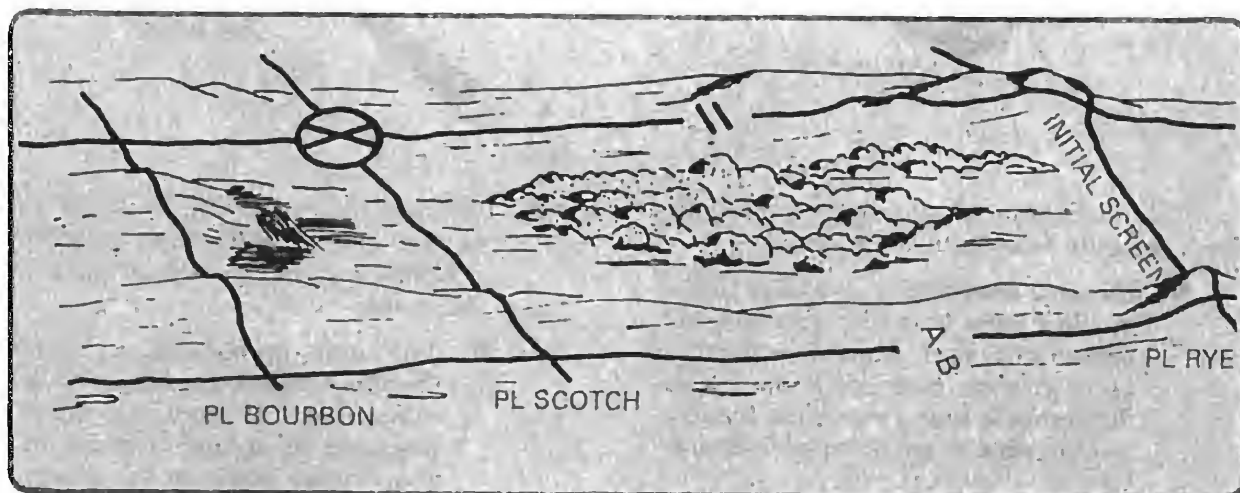
A screening mission is assigned to keep an area under surveillance when few troops are available. Cavalry units assigned a screening mission are seldom reinforced. Exceptions are when:

- Engineers are needed to accomplish a specific task.
- Artillery is required to permit an air cavalry squadron or a divisional armored cavalry squadron to operate beyond the range of main body artillery.

A commander assigning a screen mission expects only early warning and a counter to enemy reconnaissance activities.

Screening Operations. A cavalry unit may screen a stationary or moving force.

A screen for a stationary force is accomplished by establishing successive screen lines. A screen line is a line of OP's overwatching avenues of approach into an area.



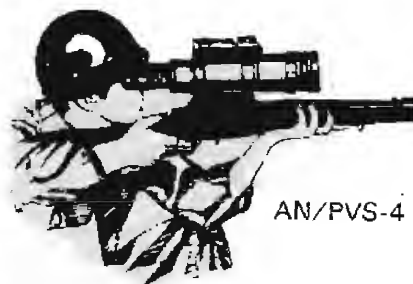
Patrols reconnoiter areas which cannot be observed from an OP. OP's are located and operated as discussed in appendix F. In general, OP's strive to remain undetected and to detect and engage enemy elements with indirect fires at the maximum possible range. The cavalry unit's armor, and in the regimental squadron the tank company, are located to the rear of the OP's. These elements engage and destroy small enemy units which bypass an OP. When necessary, they help extricate an OP. As enemy pressure intensifies, OP's withdraw to a successive screen line. Tanks cover this withdrawal and then move rapidly and assume positions behind the new screen

line. When withdrawing from a screen line, emphasis is on rapid movement to the next screen line. This is necessary to ensure that gaps which may occur during withdrawal are quickly closed. This procedure is repeated as necessary. The decision to withdraw from a screen line rests with the screening force commander. Prompt, accurate reporting is essential to prevent decisive engagement or to keep units from being overrun or bypassed and cut off. Maximum use is made of STANO equipment to increase surveillance capabilities, particularly during periods of limited visibility.



AN/TVS-5

See FM 31-100 *Surveillance, Target Acquisition, and Night Observation (STANO) Operations*



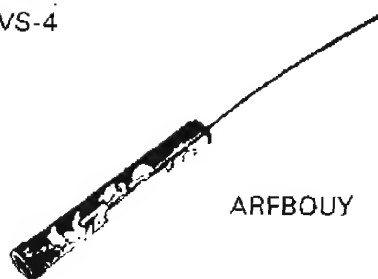
AN/PVS-4



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AN/PVS-5



ARFBOUY

The technique of screening a moving force depends on orientation:

- Cavalry screening to the front of a moving force uses the same general techniques and control measures used in zone reconnaissance. The difference is that a screening force is not required to get detailed information.

- Cavalry screening the flank of a moving force uses the same general techniques used in flank guard. These are:

- The unit moves on a route parallel to the axis of main body movement. It occupies or is prepared to occupy a series of observation posts on the screen

line which is parallel to the route of advance. The forwardmost OP is generally abreast of the rear of the leading battalion task force on the near flank of the main body.

- OP's may leapfrog from rear to front if the main body is moving slowly. This is the most secure technique.
- OP's may all move forward simultaneously on command if the main body is moving more rapidly. This is a less secure technique.
- The entire force may march continuously, using techniques similar to route reconnaissance, if the main body is moving swiftly. This is the least secure technique.
- Cavalry screening to the rear of a moving force occupies preplanned successive screen lines as during a screen for a stationary unit.

Special Considerations. The commander assigning a screening mission specifies:

- General trace of the initial screen line. The screening force commander refines the trace and assigns sectors (or zones) to subordinate units.
- Units to be screened.
- Responsibility for area between screening force and screened units. Usually, the width of the assigned area requires all ground cavalry units involved to be on the screen line. The commander assigning the mission usually will not provide additional assets. The problem of who will be responsible for the area between the main body and screening force may be resolved by using

air cavalry to initially conduct a zone reconnaissance and thereafter to maintain surveillance between screening force and screened units. Another method is to require cavalry units to conduct a zone reconnaissance during movement to the initial screen line. Units screened may also be required to patrol and/or establish OP's near their positions. Screening cavalry units must carefully plan and coordinate their subsequent return to friendly lines (appendix D).

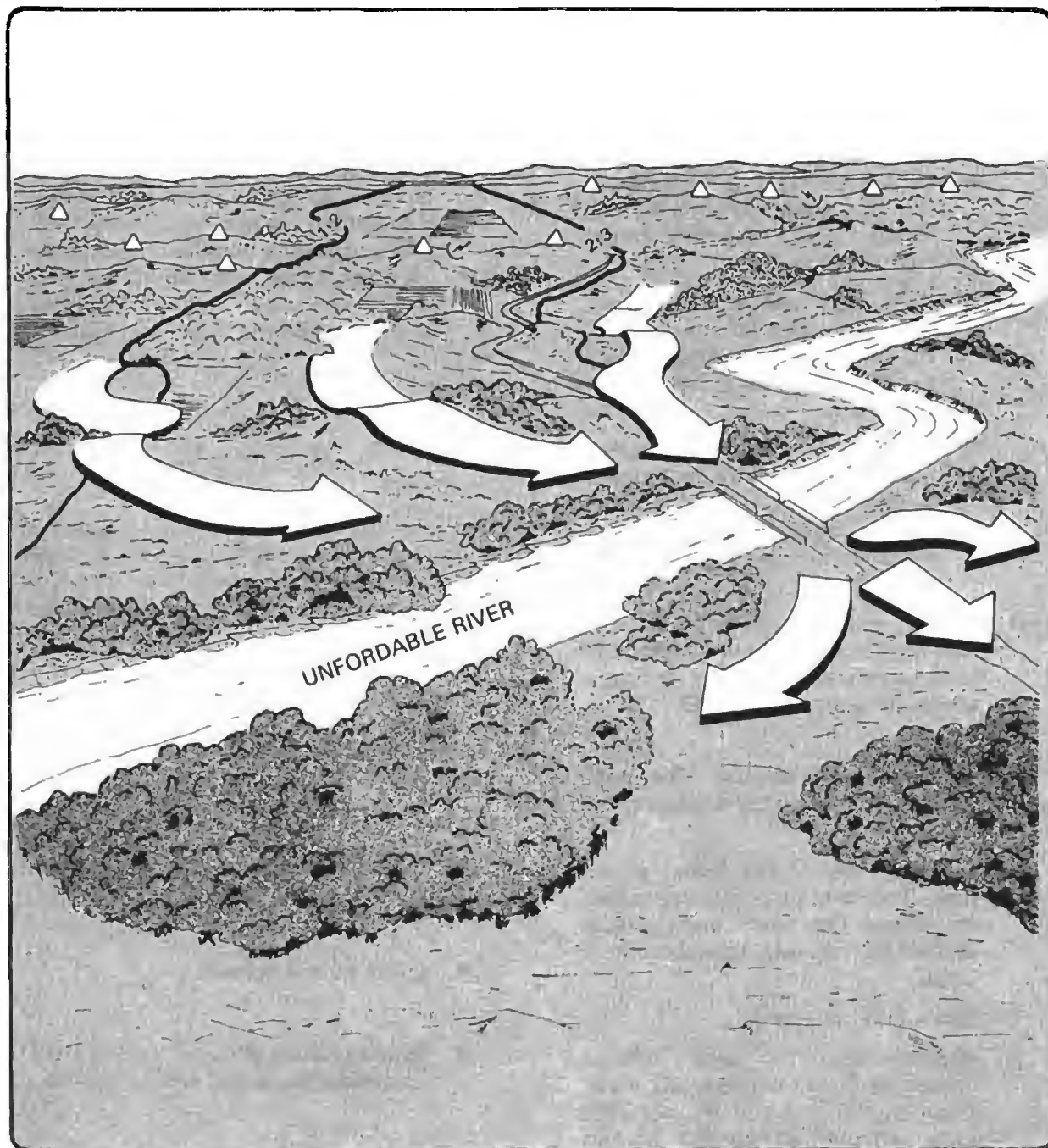
REGIMENT

A regiment with a screening mission assigns squadron sectors (or zones). The air cavalry troop may be assigned a sector or zone but it usually supplements efforts of the squadrons.

The commander assigning the regiment a mission to screen a stationary force should specify:

- A general trace of the initial screen line.
- Units to be screened.
- Responsibility for area between the screening force and screened units.

The regiment refines the general trace based on a map study and, when possible, a visual reconnaissance. This line should be established on terrain with long range observation. Successive screen lines are then designated, based on terrain which best permits long range observation.



If terrain is relatively flat and open, it may be desirable to designate successive lines overlooking obstacles, such as streams, lava fields, or mine fields.

A screening force must be able to rapidly withdraw. It must not become pinned against an obstacle crossable at only certain points. Screen lines (drawn as phase lines) are control measures to maintain unity of effort. They are not used to time phase a screening operation.

After designating screen lines, regiment assigns squadron sectors. The width of these sectors depends on the terrain and troops available. The requirement is to maintain surveillance to prevent the enemy penetrating a screen line undetected. Areas which can't be observed from OP's must be patrolled by air and/or ground elements.

After assigning sectors, the regiment designates coordination points between squadrons on each screen line.

During movement to the initial screen line and establishment of observation posts, the air cavalry troop operates in the same manner as during zone reconnaissance operations to screen forward of the squadrons. If the initial screen line is established without enemy contact, the air cavalry troop normally reconnoiters forward to the limits of

the range of supporting artillery. It uses artillery and aeroweapons to harass and impede the enemy advance. On withdrawing through the screen line, it may supplement squadrons or screen between the main body and the screen line.

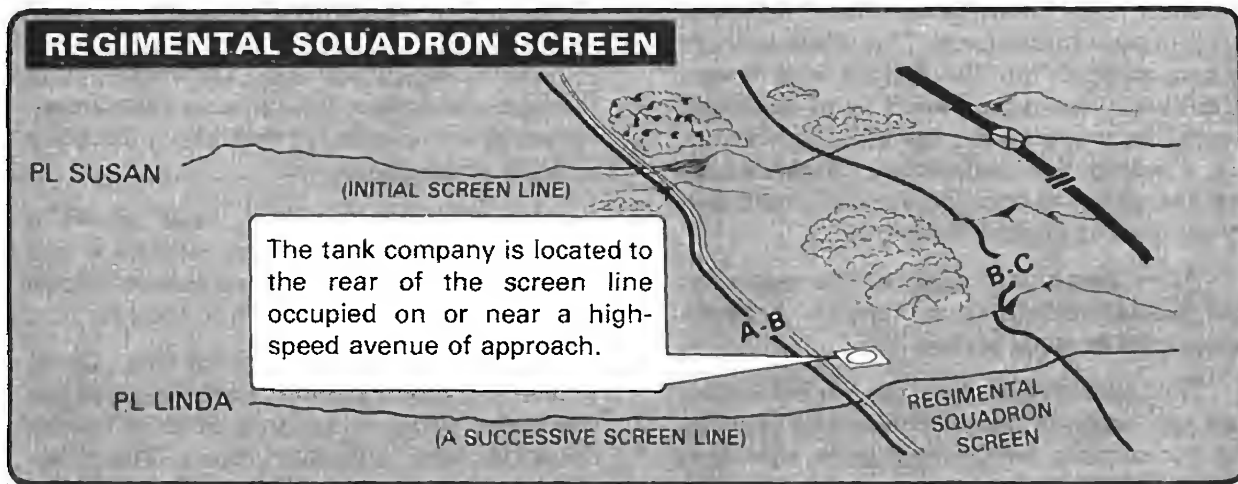
A regiment does not time phase a screening operation. It may withdraw to a successive screen line to keep elements from being overrun or bypassed and cut off.

A regiment may screen to the front, flank, or rear of a moving force. Such missions are conducted using techniques of an advance, flank, or rear covering force. The basic difference is that a regiment dispersed for screening can provide early warning of enemy location and type and degree of resistance encountered, but it can't significantly develop the situation.

ARMORED CAVALRY SQUADRON

A screening squadron normally uses all subordinate maneuver units to man a screen line. A regimental squadron may use its tank company as a reserve. It adds depth, destroys enemy forces which penetrate the screen line, helps extricate forward elements when necessary, and covers the withdrawal of forward elements along a high-speed armor avenue of approach. If so, the tank company locates to the rear of the screen line, either centrally or astride the major high-speed armor avenue of approach. In deserts or

great plains areas it may be desirable to attach a tank platoon to each troop. A tank platoon attached to a troop is used the same way. A regimental squadron may split its artillery battery into two platoons to have coverage across the squadron front. A divisional armored cavalry squadron should have an artillery battery when operating beyond the range of artillery with the main body. Air cavalry operates in the same manner as during zone reconnaissance.



An armored cavalry squadron screening a stationary force assigns troop sectors and designates check points, additional screen lines, and coordinating points between troops. A squadron operating as part of a regimental screen does not designate successive screen lines. Screen lines are depicted as phase lines. The width of troop sectors is based on the terrain and the number of OP's and patrols required to observe the terrain. Movement to the initial screen line may be conducted as a zone reconnaissance. The location of each OP and patrol area must be accurately known at squadron. Maximum use is made of long range direct and indirect fires to harass, impede, and destroy the enemy. Close combat should be avoided. A squadron must continually monitor and report the situation in order to keep elements from being overrun or bypassed and cut off. The length of time a squadron can occupy a particular screen line usually decreases as successive screen lines are occupied. This is because the enemy increases his strength as the operation continues. When available and if time permits, close air support and attack helicopters destroy hard targets, such as tanks.

An armored cavalry squadron may screen the front, flank, or rear of a moving force.

A squadron screening *forward* of a moving force normally advances with three

armored cavalry troops abreast. The regimental air cavalry troop and the divisional air cavalry troop operate in the same manner as during zone reconnaissance. The squadron advances to gain contact. It is responsible for providing early warning of enemy locations and type and degree of resistance encountered. It can't develop an enemy contact in the same detail as during reconnaissance operations. When a squadron can advance no further without risking destruction, it stops and establishes a stationary screen line. This is normally about 10-15km after first contact if the enemy is deployed for defense. If the enemy is also moving to contact, the squadron should halt when reconnaissance elements are encountered.

A squadron screens the *flank* of a moving force as follows:

- The squadron occupies a series of OP's along its route of advance.
- The squadron is not responsible for clearing the area between its route of advance and the screened force unless specifically directed.
- If threatened by advancing enemy forces, the squadron halts forward movement and occupies successive screen lines in the same manner as when screening for a stationary force.

ARMORED CAVALRY TROOP AND PLATOON

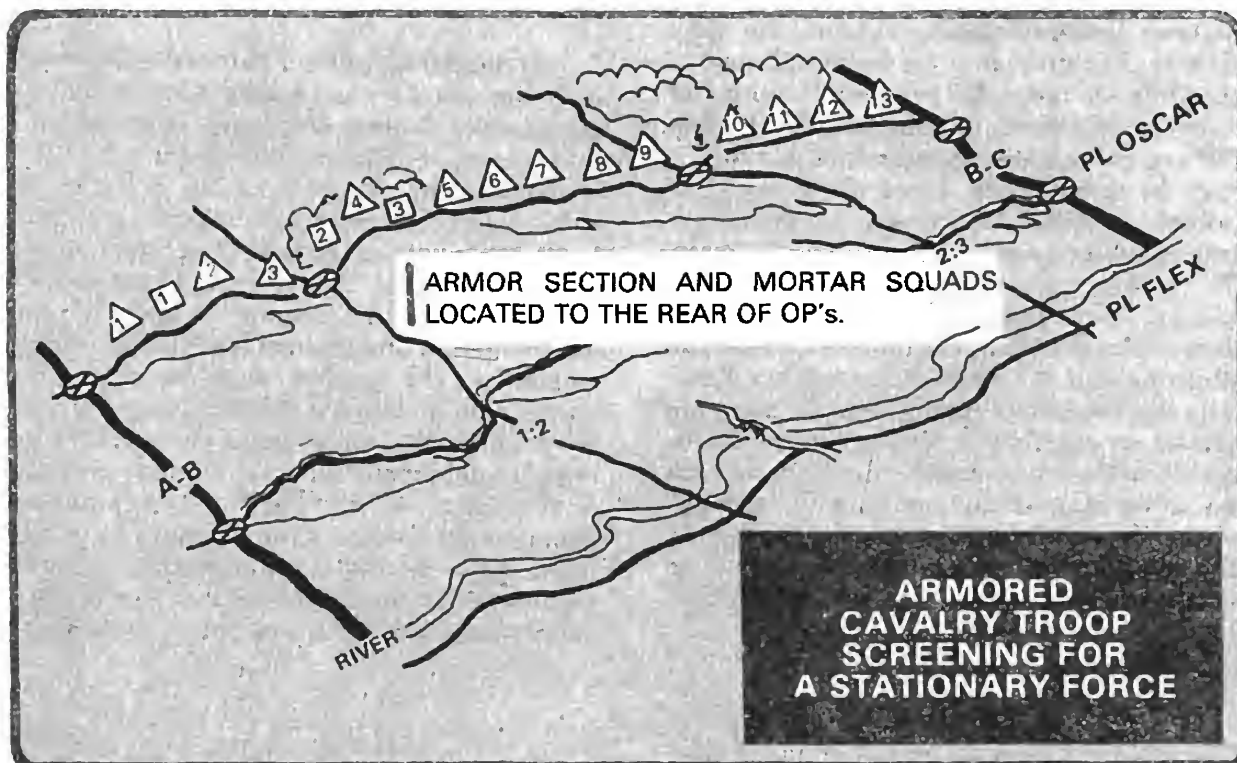
A troop usually screens as part of its parent squadron, however, it can screen alone. Similarly, an armored cavalry platoon normally screens as part of its parent troop, but it can also screen alone. Mortar squads are attached to the platoons. Since the situation and width of sector usually prevents reconnaissance, the troop commander's plans are based upon map reconnaissance.

★ **Armored Cavalry Troop.** Based on his map study, a troop commander screening a stationary force selects the general location of OP's and determines areas which must be patrolled. He must ensure complete surveillance forward of the screen line. He then designates boundaries and coordination points between platoons, and contact points between and slightly forward of OP's in areas which must be patrolled. He assigns each OP a number.

The width of a platoon sector depends on the number of OP's and patrols required. Areas between OP's which can't be observed from an OP, such as a dense woods, must be patrolled. The light armor section and support squad are located to the rear of the OP's. An OP or patrol detecting the enemy quickly reports to the platoon leader. The reporting element then uses indirect fires to destroy or repel the enemy.

Primary considerations are:

- Location of an OP or patrol should not be compromised.
- It is usually best to avoid close combat by destroying targets at long ranges. On the other hand, when



contact is made with an enemy reconnaissance patrol, it may be desirable to withhold fire, observe the patrol's activity, and detect what is following it. A troop (and consequently a platoon) must obtain permission to permit an enemy element to pass. At times, a squadron may direct a troop to permit an enemy reconnaissance element to penetrate the screen line to let the situation develop without altering the enemy. These enemy elements become the squadron's responsibility and may subsequently be destroyed by air cavalry. A troop commander must ensure the situation is accurately reported as it develops. He must obtain permission from squadron (or other controlling headquarters) before withdrawing from a screen line. All available fire support harrasses and impedes the enemy.

When a troop receives permission to withdraw from a screen line, the platoons are normally withdrawn simultaneously. The platoon leaders initially retains the tank section in position to cover the withdrawal of the OP's. On order, QP personnel mount and move rapidly to the rear, usually to establish OP's on the successive screen line. At times, it may be desirable to use a scout squad to prepare demolition charges to destroy a bridge, crater a road, or plant antitank mines. The mortar squad should precede the tank section, but should also remain within supporting distance. The dispersion between platoons and the necessity to quickly establish the successive screen line requires emphasis on quickly completing the withdrawal. While the job of maintaining contact with an advancing enemy as widely dispersed elements withdraw is extremely dangerous, the withdrawal of platoons as complete entities would result in loss of contact.

Emphasis is placed on rapidly occupying the successive screen line to make sure the enemy does not bypass the screening force and surprise the screened force.

A troop screening forward of a moving force advances with three platoons abreast as during a zone reconnaissance. It can only provide early warning of location and type and degree of resistance encountered. It cannot provide detailed information of routes or terrain. When the troop encounters enemy reconnaissance elements, it conducts the operation in the same manner as when screening for a stationary or moving force. It must also be prepared to assist the passage of follow-on units of the main body (appendix D).

A troop screening a flank of a moving force plans a line of OP's and is prepared to occupy each in turn as the main body advances. The number of OP's which must be occupied simultaneously depends on the factors of METT. A troop screening the rear of a moving force generally uses the same techniques as when screening a stationary force.

Armored Cavalry Platoon. A platoon may operate as a screening force when a commander desires only early warning or does not have adequate forces for guard or cover missions. A platoon often performs a screening mission while the remainder of the troop or squadron guards. The troop commander specifies the general locations of OP's. The specific location of each OP is determined by the platoon leader. Within its capability, the platoon destroys or repels enemy reconnaissance units and impedes the advance of the main force elements with organic and supporting fires. When screening a stationary or moving force, a platoon usually organizes into three teams. As in all other missions, the team organization may change as the situation and terrain change. Scouts establish OP's and patrol areas that

can't be observed from OP's which should be concealed in defilade. The platoon leader uses the tank section to engage enemy elements, extricate OP's if necessary, and cover the withdrawal of OP's. The platoon leader may move the tank section forward as needed to provide long range, direct antitank fires. When moved forward, the tank section should avoid OP sites so as not to disclose their locations. The enemy returns direct and indirect fires. Tanks, when firing, will more likely be detected than a cleverly concealed OP.

Selection of, movement to, occupation of, and action on OP sites are discussed in appendix F. The armored cavalry platoon is most effective when assigned not more than three OP's. In cavalry, a minimum of five men are required at an OP in order for dismounted patrolling. For short periods, an armored cavalry platoon can establish six OP's. Six OP's are manned by a scout vehicle crew on each of four positions, and two tanks on the fifth and sixth positions.

The disadvantages of establishing six OP's are: it is difficult to form a patrol, and the fatigue level, which quickly reduces unit

effectiveness, is high. Actions upon detection of the enemy and when ordered to withdraw are the same as for an armored cavalry troop.

A platoon screening or helping to screen forward of a moving force advances in the same manner as during a zone reconnaissance to provide early warning and information concerning location, type, and degree of resistance encountered. When the platoon encounters main force elements or a team is halted, the platoon should cease forward movement and operate the same as when screening for a stationary force.

A platoon screening or helping to screen the rear of a moving force uses the same techniques as when screening for a stationary force.

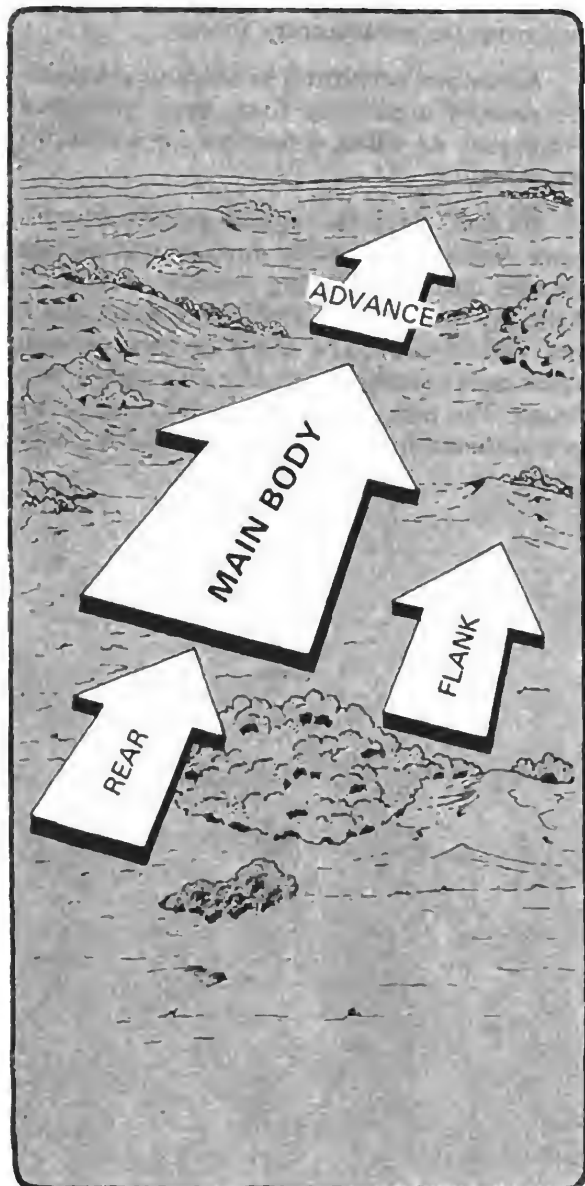
STANO devices, such as ground surveillance radar, night vision devices, and remote sensors, are used during periods of reduced visibility to improve surveillance (appendix F and FM 31-100). The troop ground surveillance radar section normally operates in two teams. The teams are usually attached to the two platoons having the greatest need (chapter 7).

GUARD

GUARD OPERATIONS

The purpose of a guard operation is to obtain early warning, reaction time, and maneuver space to the front, flank, or rear of a moving or stationary force. A guard opera-

tion is usually conducted within range of artillery with the main body. A guard force reconnoiters, screens, attacks, and defends as required for mission accomplishment. Guard operations may be conducted by cavalry units to the front, flank, or rear of a stationary ★ or moving force. Air cavalry conducts screening operations as part of armored cavalry guard operations.



Advance Guard. An advance guard for a stationary force deploys forward and defends. An advance guard for a moving force develops the situation along specific routes or axes of advance to prevent premature deployment of the main body.

Flank Guard. A flank guard protects a flank of the main body from ground observation, direct fire, and surprise. A flank guard for a stationary force deploys to the flank and defends. A flank guard for a moving force establishes a series of troop-size battle positions generally parallel to the main body's axis of advance and occupies new ones as the main body advances.

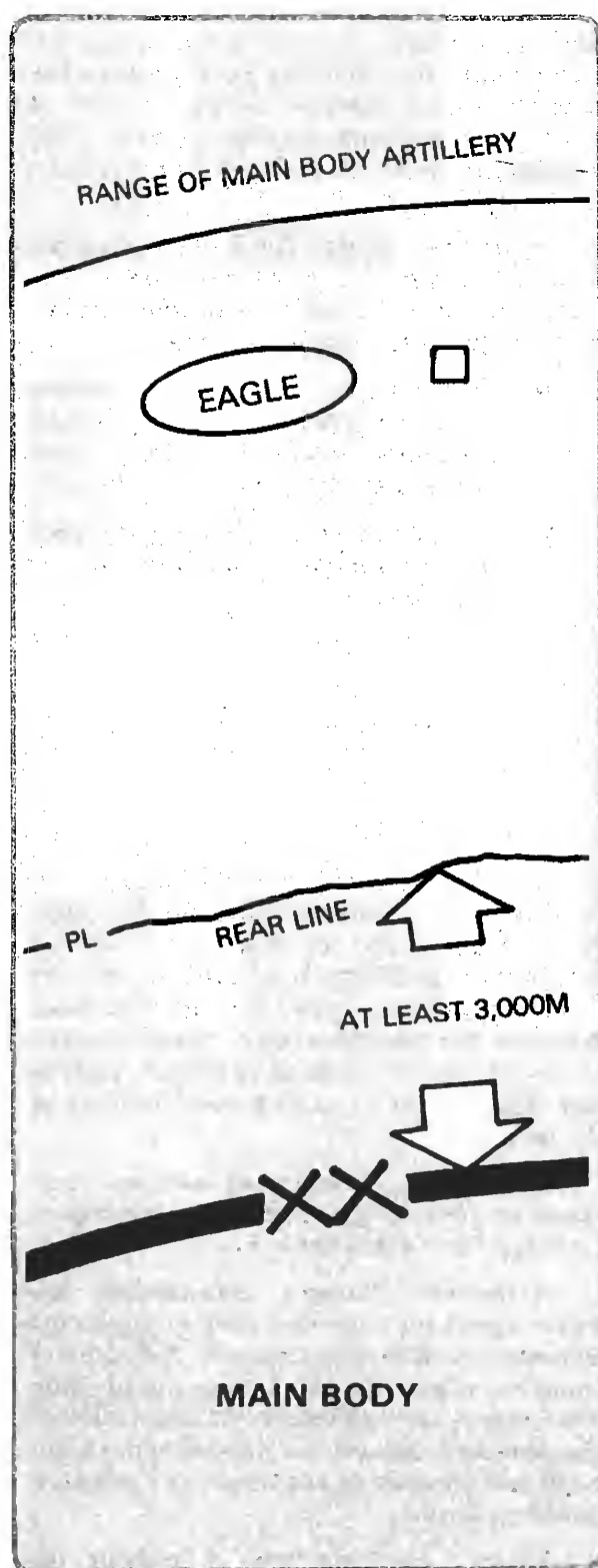
Rear Guard. A rear guard does the same things as a flank guard. A rear guard for a stationary force deploys and operates the same as when performing an advance or flank guard for a stationary force. A rear guard for a moving force does the same thing, except it is periodically drawn in to stay within range of the main body's artillery.

Cavalry Guard Operations for a Stationary Force. A cavalry unit conducting a guard operation for a stationary force deploys forward of a designated phase line normally within range of artillery from the main body, and defends. Cavalry must sometimes fight to reach it. A cavalry unit does not withdraw behind the designated phase line without permission. A phase line designating the rear of a cavalry unit's area should be farther from the main body than the effective range of enemy direct-fire weapons (3,000m).

A cavalry unit normally conducts zone reconnaissance during movement to its initial battle position. If the situation prevents or does not require zone reconnaissance, the cavalry unit moves as during movement forward of friendly lines for area reconnaissance.

Once in position, the cavalry unit organizes a defense based on exploiting every advantage offered by terrain, capabilities of its weapons, equipment, and supporting fires. The purpose of this defense is to:

- Provide main body reaction time.
- Subject enemy to continuous attrition beginning when he is first detected.
- Destroy enemy reconnaissance units.
- Force enemy advance guard to deploy for one or more attacks, thereby revealing the primary axis of the advance of the regiment.



Cavalry Guard Operations for a Moving Force. A cavalry unit as an advance guard for a moving force develops the situation along specific routes or axes of advance to prevent surprise or premature deployment of the main body. It must have artillery coverage.

A cavalry unit as a flank guard does the same thing for a moving force it does for a stationary force; however, techniques differ. A flank guard for a moving force:

- Systematically advances to a series of battle positions by moving along a designated route generally parallel to the main body's axis of advance.
- Is responsible for clearing the area between its route of advance and the main body.

- Normally involves more reconnaissance activity.

A cavalry unit as a rear guard does the same thing for a moving force it does for a stationary force, except it must be periodically drawn in to stay within range of the main body's artillery.

Cavalry Units in All Guard Operations. A regiment usually does not operate as a guard force.

Air and armored cavalry squadrons reconnoiter or screen forward of a moving force. An armored cavalry squadron may conduct all types of guard operations for a stationary or moving force. An advance guard for stationary force is rare. An air cavalry squadron or troop reconnoiters, screens, or conducts area security.

ARMORED CAVALRY AS ADVANCE GUARD

An advance guard for a stationary force deploys and defends to gain time for main body reaction and to destroy the enemy within its capability. It withdraws only on order. An advance guard for a moving force develops the situation early along specific routes or axes of advance to prevent premature deployment or unnecessary halting of the main body.

Regiment. A regiment does not operate as an advance guard; it conducts advance covering force operations.

Armored Cavalry Squadron. Advance guard for a moving force is conducted as route or zone reconnaissance. A divisional squadron often acts as advance guard when the division moves to contact. Deployment of the squadron depends on the size of the main body and whether or not there is an advance covering force.

When a covering force is leading, the

squadron operating as an advance guard usually deploys ahead of the main body along specific routes or axes of advance to further develop the situation, prevent unnecessary deployment of the main body, and ensure its uninterrupted advance. A divisional squadron uses its air troop across the entire zone and usually retains no reserve. A regimental squadron may retain the tank company as reserve, directing it to move behind the center troop or to move a platoon behind each troop.

When no covering force is leading, the squadron deploys in the same manner as for zone reconnaissance.

Armored Cavalry Troops and Platoons. Troops and platoons normally operate as part of a larger force in advance guard operations. They deploy and operate the same as in route or zone reconnaissance (chapter 5), prepared to attack or defend as the enemy situation develops.

ARMORED CAVALRY AS FLANK GUARD

A flank guard for a stationary force normally conducts zone reconnaissance while moving to its area. If such reconnaissance is not required or time does not allow it, the force moves directly to its line of battle positions the same way it moves to an area reconnaissance. The force uses movement techniques appropriate to the likelihood of enemy contact. To guard the flank of a moving force, cavalry units systematically occupy a line of battle positions generally parallel to its axis of advance. The flank guard is responsible for clearing the area between the line of battle positions and the main body. Cavalry units attack, if necessary, to establish battle positions and then defend them.

Regiment. A regiment does not usually operate in flank guard; it conducts flank covering force operations.

Armored Cavalry Squadron. An armored cavalry squadron can protect one flank of a division. When a division has both flanks exposed, a troop may screen the least vulnerable one while the rest of the squadron protects the other. The single troop in such cases is usually attached to a brigade. The general concept of flank guard is the same whether the protected force is stationary or moving. Guarding the flank of a moving force is much more difficult because of the requirement to move the guarding force.

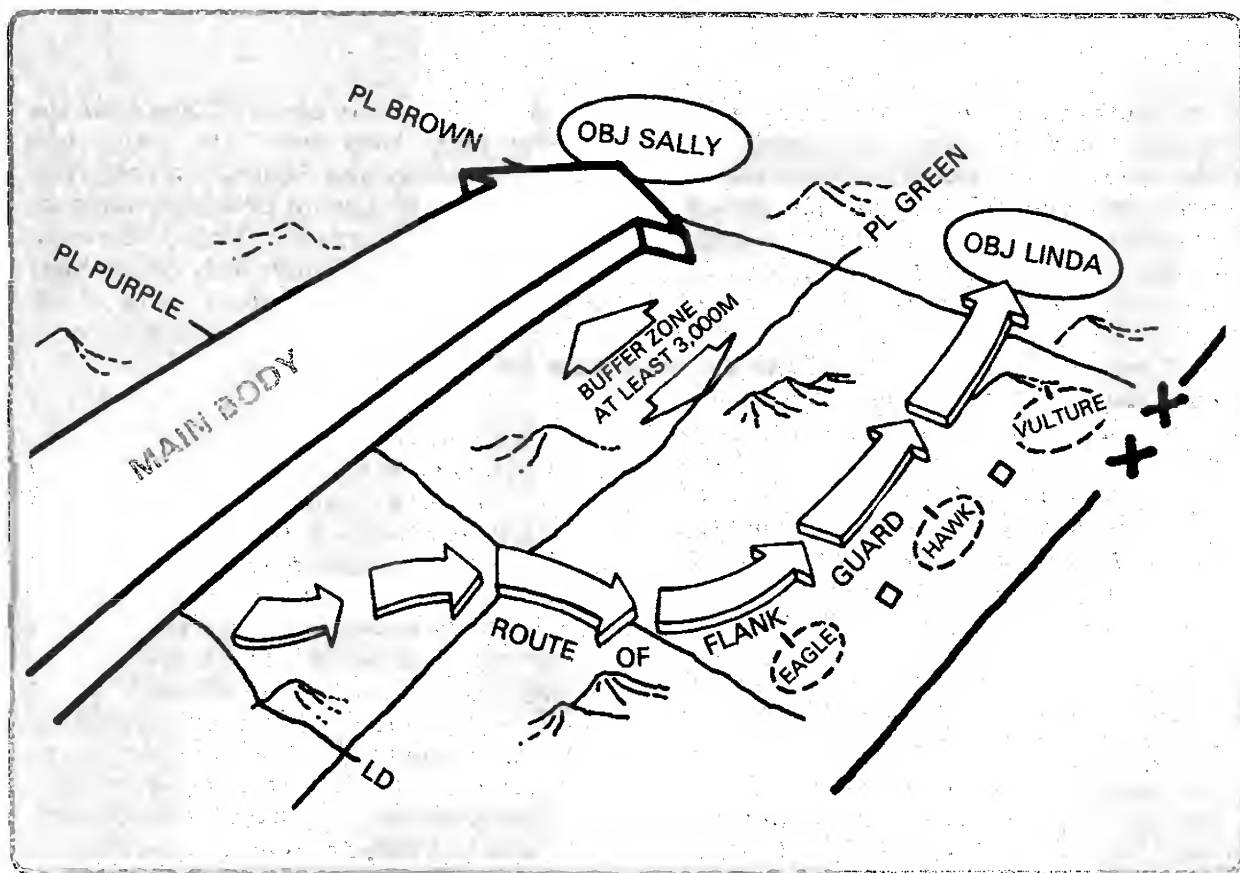
When an armored cavalry squadron is ordered to guard the flank of a moving force, the main body commander specifies units to be protected. This responsibility usually extends from the rear of the lead flank battalion task force in the main body to the rear of the main body, exclusive of any rear guard. The main body commander also indicates a line the guard force can't withdraw across without permission. This line is designated as a phase line, but is treated as a rear boundary in the event that the flank guard must defend against a sizable enemy

attack. It is usually about 3,000m from the nearest main body unit. The main body commander may also designate an objective which serves as a point of orientation and, when secured, guards the flank of the main body objective. The main body commander may designate the squadron route of advance. If he does not, the squadron commander selects one.

This route of advance should parallel the main body axis of advance and provide rapid access to battle positions. The squadron commander chooses battle positions which dominate likely enemy avenues of approach. These positions are along a line generally parallel to the main body axis of advance and as far from it as possible while still covering enemy avenues with field artillery. While location of this line depends largely on terrain, the limitation of field artillery range dictates that it will rarely be more than 10-12km from the main body. This distance may also be limited by the main body boundary.

The squadron defends the flank by planning troop-size battle positions on the far flank of the route of march. The leading troop acts as advance guard, maintains contact with the rear of the leading task force, reconnoiters, and as far as possible, clears the area between the main body and the squadron's route of advance. The other troops follow and occupy designated battle positions on order.

When the distance from main body to the line of battle positions is great, the leading troop may require help to accomplish one or more of its three tasks. A divisional squadron may use the air troop to screen the area between the guard force and the guarded force and to maintain contact. A regimental squadron may reinforce the lead troop with an armored cavalry platoon or a tank platoon.



The squadron commander designates contact points between battle positions (usually slightly forward of them) to delineate troop responsibility and to ensure coordination through physical contact.

To start the operation, the squadron may follow the leading battalion task force through its initial penetration and then move out to its route of advance and battle positions, or it may be required to attack to create its own penetration. Descriptions of attacks begin on page 6-35. When penetrating with the main body, the movement of squadron units must be closely coordinated. The leading troop should follow the first battalion task force into the penetration. As

soon as possible, the lead troop moves out toward the line of proposed battle positions, maintaining contact with the main body and clearing the area as it moves.

The area of responsibility in such cases initially extends from the rear of the leading battalion task force to the shoulder of the penetration.

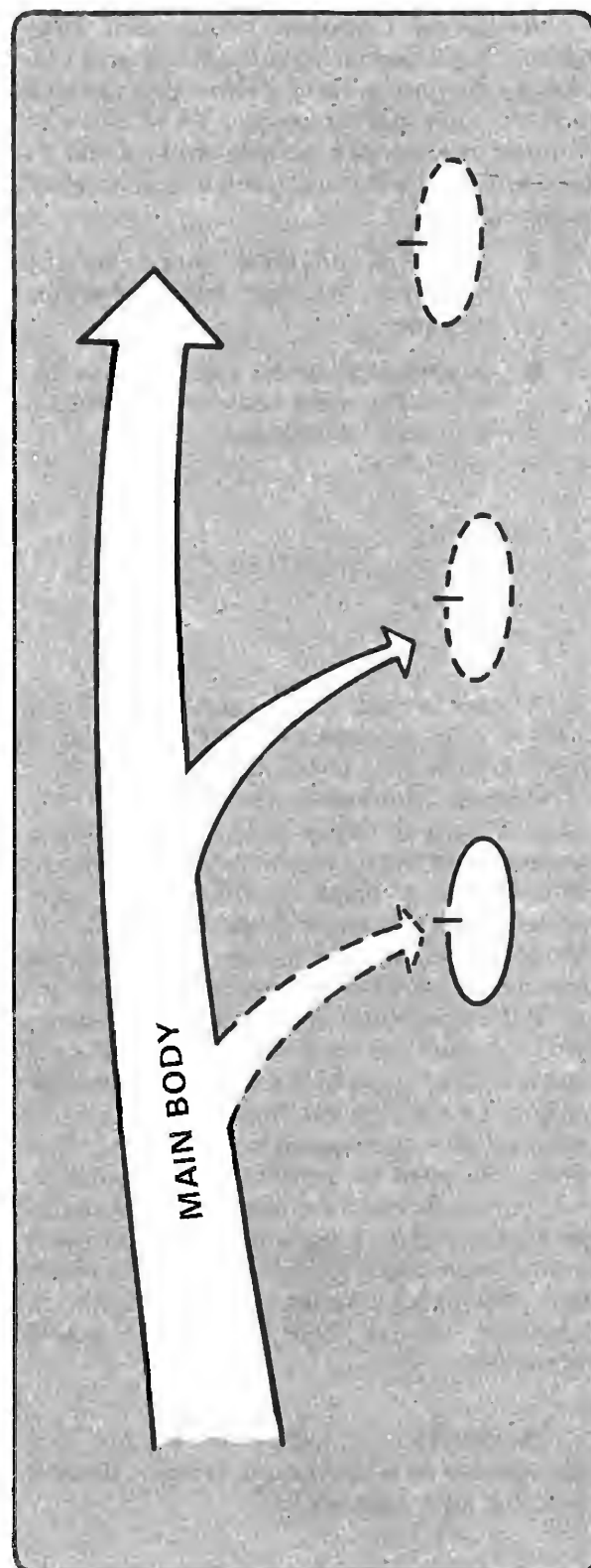
As the main body advances, the squadron occupies battle positions in succession. There are four techniques for the occupation of successive positions based upon main body rate of advance and the enemy situation. They are similar to techniques for flank screen operations.

If there is no road or convenient cross-country route for the squadron to use as a route of advance, or if enemy resistance is very strong, the squadron may follow the axis of the main body and attack outward to secure designated battle positions.

If the squadron becomes overextended, that is, if it must occupy more battle positions than it has troops, the commander must seek relief from the higher commander. The commander should recommend one of these solutions:

- Reinforce the squadron.
- Relieve the squadron of responsibility for part of the area.
- Change the mission so that the squadron can screen part of the area and guard the rest.

If the squadron faces a strong enemy attack or counterattack it must take all actions necessary to prevent the enemy force from striking the flank of the main body. The squadron may be ordered to delay the enemy advance, trading space for time and wearing down the enemy as much as possible, so that the main body commander has adequate reaction time and a reduced enemy force to defeat. The squadron commander should have a series of phase lines established, parallel to the line of battle positions, to be used as delay lines. As enemy attack develops, the commander must quickly develop a scheme of maneuver which maximizes the destructive capabilities of organic and supporting weapons and uses all terrain advantages to preserve the force. The main body commander may direct the squadron to deny enemy access to an area needed for maneuver, or to destroy the enemy force. The specific techniques of defense to be used depend on the latitude given by the main body commander. An explanation of defense begins on page 6-40.



Armored Cavalry Troop and Platoon. An armored cavalry troop and platoon participate in flank guard operations as part of their parent units. They move to contact, reconnoiter, attack, and defend as necessary. The leading troop has a threefold mission:

- Serve as advance guard for the squadron. Occupy battle positions on order.
- Reconnoiter and clear the area between the main body and the squadron route of advance.

- Maintain contact with the main body.

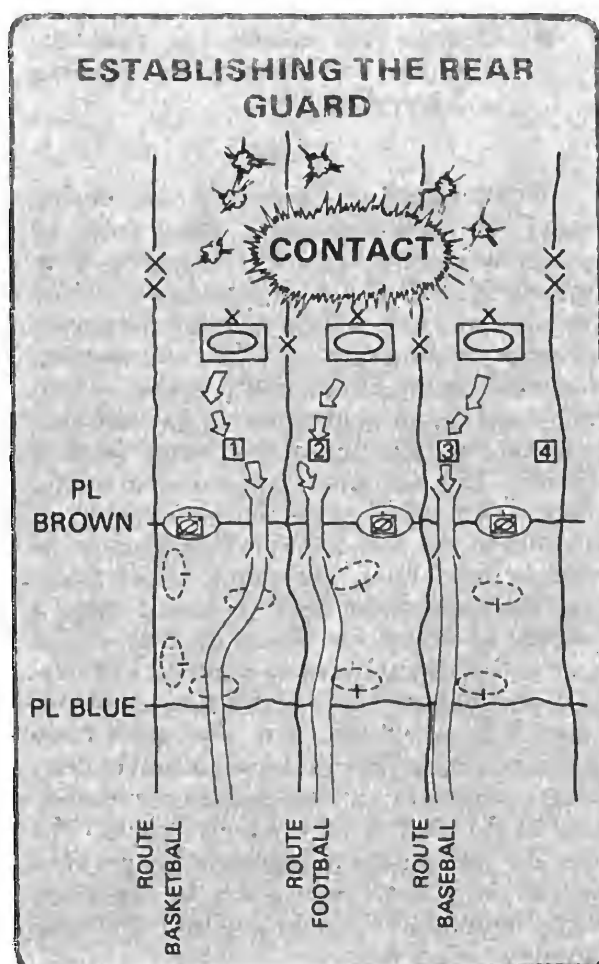
If the distance from the route of advance to the main body is great, the leading troop may require reinforcement. When air cavalry is available, it can reconnoiter and maintain contact with the main body, thus freeing the leading armored cavalry troop to concentrate on its advance guard battle position task.

Following troops march, attack, and defend as necessary and as ordered.

ARMORED CAVALRY AS REAR GUARD

A rear guard for a stationary force deploys and defends. A rear guard for a moving force does generally the same. The difference is orientation of movement. A rear guard follows the main body by occupying a succession of battle positions and screening between flank battle positions and rear elements of the main body flank. Battle positions are based on a succession of phase lines designated by the main body commander. Battle positions are planned three deep, and occupied on order. Battle positions between flank units of the rear guard and the main body are planned, but occupied only on order of the rear guard commander. The flank area must be continuously screened to keep enemy forces from penetrating between the rear guard and main body. Withdrawal to successive phase lines is on the order of the main body commander, or if authority is delegated, on the order of the rear guard commander.

Regiment. A regiment does not usually operate as a rear guard; it conducts rear covering force operations.



Armored Cavalry Squadron. An armored cavalry squadron may be a rear guard for a moving or stationary force. If the main body is stationary, the squadron establishes a line of battle positions behind the main body, oriented away from the main body, and defends or delays as necessary against enemy attacks. If the main body is moving, techniques of guarding the rear depend upon whether the movement is toward the enemy or away.

If movement is toward the enemy, the rear guard is in the least vulnerable position

of any of the forces. The squadron conducts successive withdrawals to new lines of battle positions as the main body advances.

If movement is away from the enemy, the rear guard is in the most exposed position. The squadron may either relieve other units in place while they move to the rear, or it may establish a line of positions (oriented toward the main body) behind the main body and pass those forces through (appendix D). Thereafter, the operation is conducted the same as any other defense or delay.

COVER

The purpose of a cover operation is to provide the main body early warning, reaction time, maneuver space, and information about the enemy. A covering force is a tactically self-contained security force which operates at a considerable distance to the front, flank, or rear of a moving or stationary force. Its mission is to develop the situation early and defeat the enemy. If the latter is not possible, the covering force deceives, delays, and disorganizes the enemy until the covered force can effectively react. A covering force:

- Operates beyond the range of artillery with the main body. The distance is a function of METT (mission, enemy, terrain, and troops available). A reinforced regiment may act as a covering force at a distance as great as 50 - 60km from the main body initially.
- Develops situations earlier than a guard force, and fights longer, fights more often, and defeats larger enemy forces.
- Accomplishes all functions of a:
 - Screen (provide warning, destroy or repel enemy reconnais-

sance units, force deployment of the enemy's advance guard and first echelon regiments.)

- Guard (provide warning, destroy or repel enemy reconnaissance units, force deployment of the enemy's advance guard, and destroy it if possible).

A covering force reconnoiters, screens, and fights as necessary for mission success. It should not become engaged to the point that it can no longer move; it must not allow itself to be bypassed or cut off. A regiment can act as a covering force without reinforcement, but it is normally reinforced with maneuver, combat support, and combat service support units. This reinforcement increases:

- The distance and length of time the regiment can operate away from the main body.
- The regiment's capability to destroy the enemy.

Squadrons, troops and platoons normally conduct covering force operations as part of a larger force.

ARMORED CAVALRY AS ADVANCE COVERING FORCE FOR A FORCE MOVING TO CONTACT

An advance covering force operation for a force moving to contact is conducted as a zone reconnaissance with enough combat power to develop and influence the situation by:

- Locating and penetrating the security and forward defense zones of an enemy force deployed or deploying to defend.
- Destroying enemy reconnaissance and advance guard units and forcing first echelon regiments of a moving force to deploy.

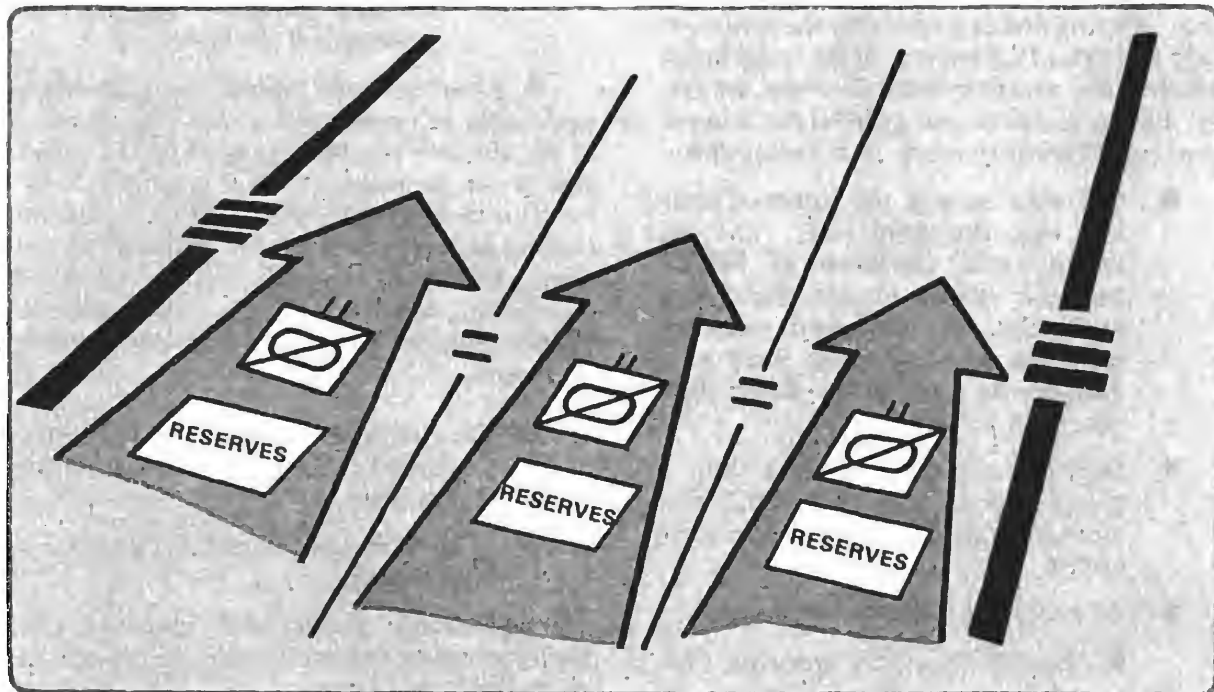
Regiment. A regiment as an advance covering force during movement to contact advances boldly on a broad front, usually with three squadrons abreast. The distance it operates forward of the main body depends on:

- The intentions and instructions of the main body commander.

- Where the enemy is encountered.
- The rates of the main body and the regimental advance.

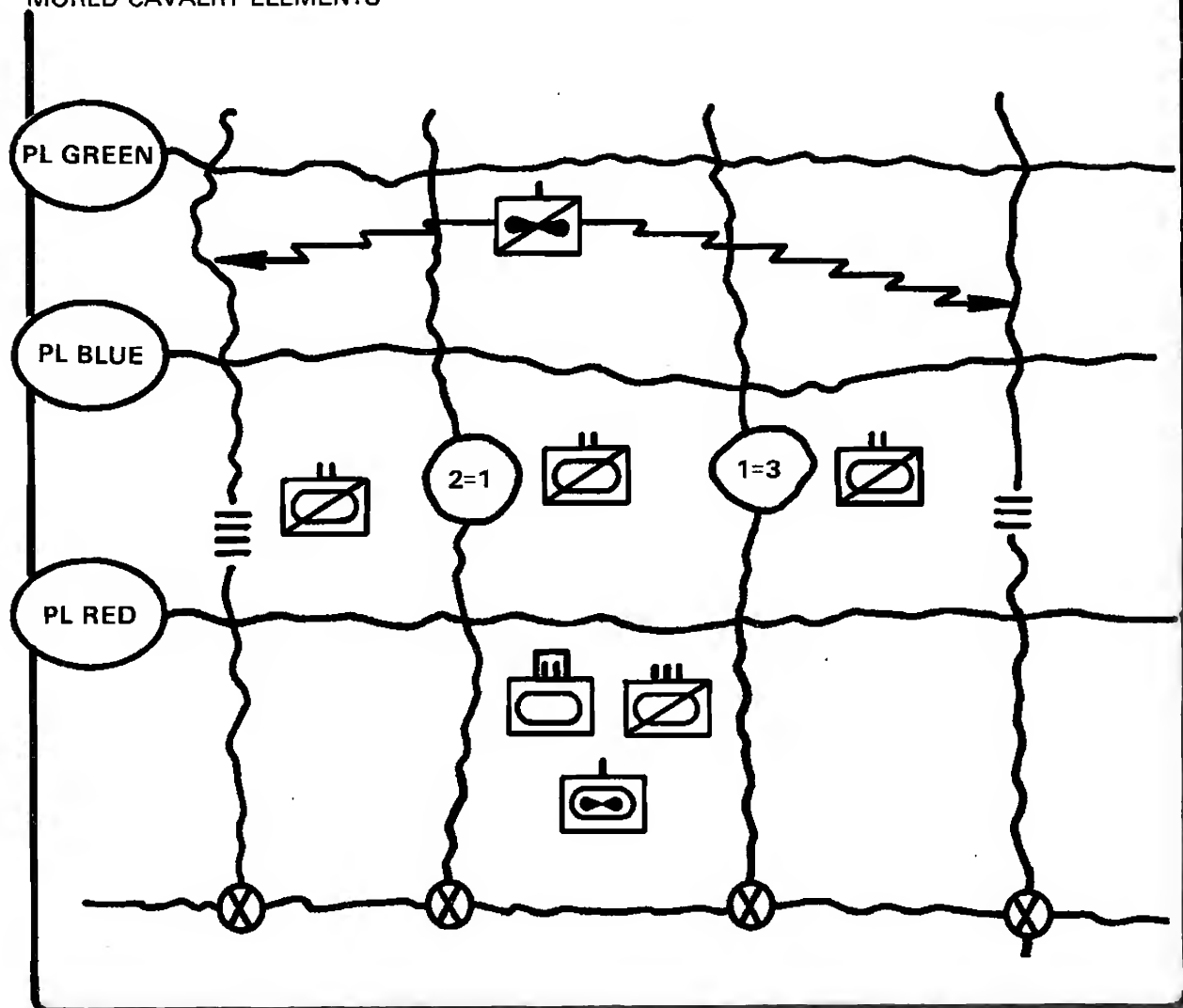
A regiment plans this operation the same way a squadron plans zone reconnaissance (page 5-23). Width of zone to be covered and areas or routes of special importance are determined. Squadron boundaries are then designated to delineate zones.

The regiment retains a reserve. It may be attached tank/mechanized infantry, or it may be constituted by requiring squadron commanders to obtain permission to commit their tank companies. The regimental reserve follows the squadrons. It may be centrally located to facilitate deployment anywhere in the regimental zone, or located in the most dangerous zone. Reserve units must be prepared to attack or counterattack from the march or to occupy battle positions.



EMPLOYMENT OF AIR CAVALRY IN A COVERING FORCE OPERATION

THE AIR CAVALRY TROOP (ACT) CONDUCTS A ZONE RECONNAISSANCE IN THE REGIMENTAL SECTOR, WELL FORWARD OF THE ARMORED CAVALRY ELEMENTS



IN THIS FLUID SITUATION, THE ACT PROVIDES THE RAPID ACCURATE INFORMATION THE CAVALRY COMMANDER REQUIRES TO MANEUVER HIS FORCES AND POSITION HIS COMBAT SUPPORT ELEMENTS IN A TIMELY MANNER.

The situation is developed in the same manner as during zone reconnaissance. Once in contact, supporting fires are quickly brought to bear for suppression. Reserve units are committed from march in hasty attacks. Audacity and boldness are prerequisites for success. An enemy found, fixed, and destroyed will not have to be fought again. A regiment bypasses an enemy force only with the permission of the main body commander. During active nuclear warfare, nuclear weapons are used against strong points of resistance and stationary massed armor, motorized forces, and artillery.

When a regiment can advance no farther without becoming decisively engaged, it defends (page 6-43). This is normally about 15km after meeting the enemy reconnaissance elements of a force deployed or deploying for defense. A flank or weak spot must be immediately reported to the main body commander.

Armored Cavalry Squadron. A regimental armored cavalry squadron normally participates as part of a regiment in an advance covering force operation for a force moving to contact. A divisional armored cavalry squadron may be reinforced and attached to a regiment. Actions of a squadron as part of the covering force are the same as for zone reconnaissance (page 5-23). A regimental armored cavalry squadron and the divisional armored cavalry squadron, when reinforced, may act as an advance covering force for a force moving to contact. In this case, the actions of an armored cavalry squadron parallel those of a regiment.

Armored Cavalry Troop and Platoon. An armored cavalry troop and platoon participate in an advance covering force for a force moving to contact as part of their parent unit. Their actions are the same as during zone reconnaissance (page 5-28).

ARMORED CAVALRY AS COVERING FORCE FOR DEFENSE

An advance covering force for a force deployed or deploying for defense operates forward of the main body in the covering force area (CFA). Although any mobile force may be deployed and fight in the CFA, covering forces usually organize around armored cavalry and reinforce with sufficient tank, antitank, field artillery, air defense artillery, engineer, and attack helicopter forces for the mission.

Regiment. The main body commander uses phase lines to designate the forward edge and the rear of the CFA. The rear of the CFA is the forward edge of the main battle area (MBA) and is within range of artillery with main battle area divisions. The time enemy forces are to be held forward is usually not specified. The regiment designates phase lines to form belts about 5-10km deep to help control the operation.

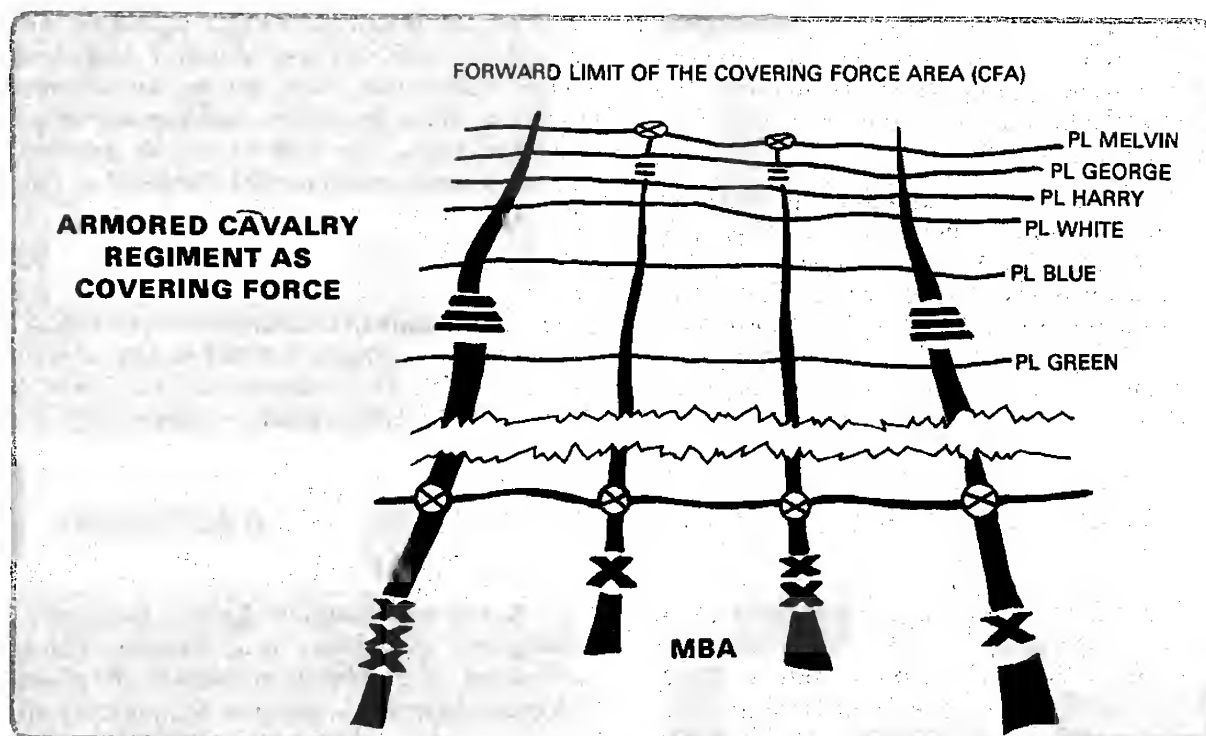
A regiment usually deploys forward by assigning squadrons zone reconnaissance missions. If the situation does not allow zone reconnaissance, squadrons deploy forward the same way as during movement forward of friendly lines of area reconnaissance.

Regimental boundaries are forward extensions of main body boundaries; similarly, squadron boundaries are extensions of the boundaries of some part of the main body. This technique simplifies transfer of control of the battle as the regiment comes within range of field artillery with forward divisions in the MBA.

THE PRIMARY PURPOSE OF A COVERING FORCE IS TO FORCE THE ENEMY TO DEPLOY AND FORM FOR A DELIBERATE ATTACK BEFORE IT REACHES THE MBA. IT DOES THIS BY FIGHTING A MAJOR BATTLE OF ATTRITION IN THE CFA.

A covering force should not be required to fight forward to establish control over the area. If heavy enemy resistance is present, the covering force is normally ordered to occupy a general line behind which the main battle area can be organized. If time is the driving factor, as it may be when divisions

are deploying on short notice, then the covering force operation is a delay with time required for that deployment specified to the covering force commander. If time is not a problem, then units of the covering force block, use surprise attack by fire, delay, and counterattack as necessary to defeat leading enemy regiments.



Some distance forward of the main battle area, the regimental commander must be prepared to release control of squadrons and any attached battalion task forces to commanders of MBA brigades. This distance depends on terrain, ability of field artillery positioned in the MBA to support, and readiness of brigade commanders to assume control. Squadrons and task forces are usually attached to brigades. Once control of the fight has passed from the regimental commander, he and his headquarters are available for other purposes. The headquarters usually locates in the corps rear area. It

has planning responsibility for several contingencies, such as area security operations, reinforcement of one or another of the divisions, and counterattacks. Thus, contingency planning can be started while detached units continue the fight under other headquarters.

The regiment can't execute any plan until combat units return to its control. The squadrons normally remain under the control of defending brigades until the need for reconnaissance or security operations outweigh the need for cavalry fire power in the main battle area.

Armored Cavalry Squadron. Either regimental or divisional squadrons may participate in forward covering force operations as part of a larger force. Techniques for this operation are surprise attack by fire or fire and maneuver, blocking, and delay. Each squadron must be prepared to report to the headquarters of a brigade in the MBA, to be attached to that brigade and to operate under its control when so ordered. The

covering force operation ends with hand off of enemy contact to forces in the MBA and movement into the MBA.

Armored Cavalry Troop and Platoon. Armored cavalry troops and platoons participate in forward covering force operations as part of a larger force, either the parent squadron or a battalion task force. They engage, block, delay, and counter-attack as required.

ARMORED CAVALRY AS FLANK COVERING FORCE

A regiment normally covers one flank of the main body. At times it may be required to provide a covering force on one flank and to guard the other. In this case, one squadron, with or without reinforcement, is assigned to the least threatened flank. It may be controlled by the main body commander or attached to the major subordinate unit on that flank.

Regiment as a Flank Covering Force for a Defense. A regiment as a flank covering force for a force deployed or deploying to defend deploys into a flank CFA and defends.

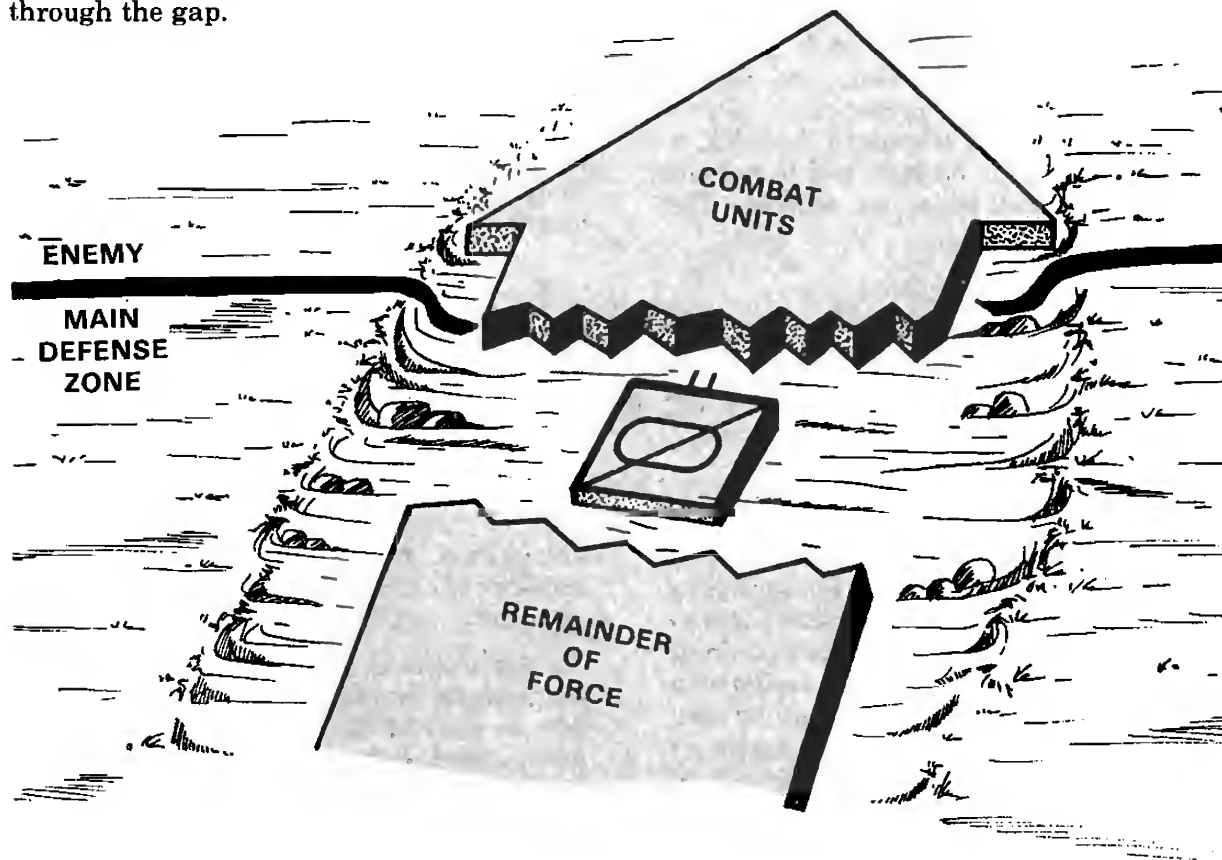
An armored cavalry squadron normally participates as part of a regiment in a flank covering force operation for a force deployed or deploying for defense. A divisional armored cavalry squadron may be reinforced and attached to a regiment. A squadron as part of a flank covering force reconnoiters, screens, attacks, and defends as required. A regimental armored cavalry squadron and the divisional armored cavalry squadron, when reinforced, may act as a flank covering

force alone. In this case, the actions of an armored cavalry squadron parallel those of a regiment.

An armored cavalry troop or platoon participates in a flank covering force operation as part of its parent unit. It deploys, reconnoiters, screens, attacks, and defends as required.

Regiment as a Flank Covering Force for a Moving Force. A regiment as a flank covering force for a moving force operates generally the same as a squadron conducting a flank guard operation for a moving force (page 6-23). The difference is the scope of operations and the distance from the main body. The main body commander specifies how and when a regiment assumes a flank covering force mission. If the main body is penetrating a main defensive belt, the regiment may be integrated into the formation of the main body for passage through the initial gap. How this is done depends on the degree of enemy resistance, terrain, and speed of the main body's advance.

If the flank division has a flank guard, the regiment's lead squadron will probably follow the division's rear combat units through the gap.



The regiment must clear the area between the regimental route of advance and the main body. It must also maintain contact with some element of the body. The specific element is identified by the main body commander and depends on whether the main body has an advance covering force and whether the leading flank division has a flank guard.

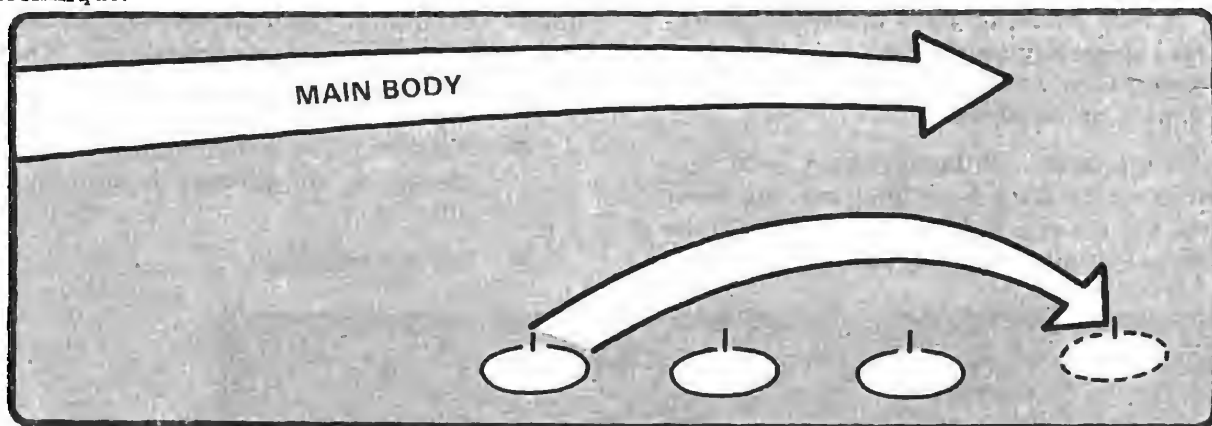
If terrain is relatively open and enemy resistance is weak, a regiment may make its own penetration. During active nuclear warfare a regiment may use nuclear weapons to penetrate.

A regimental armored cavalry squadron normally participates as part of a regiment in a flank covering force operation.

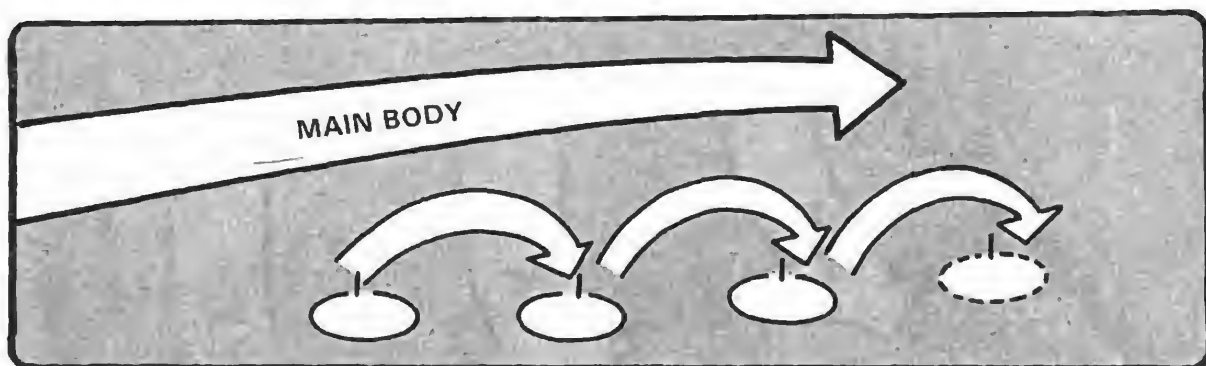
A divisional armored cavalry squadron may be reinforced and attached to a regiment. A squadron as part of a flank covering force for a moving force reconnoiters, screens, attacks, and defends as required. A regimental armored cavalry squadron and the divisional armored cavalry squadron, when reinforced, may act as a flank covering force. In such a case, the actions of an armored cavalry squadron parallel those of a regiment.

Armored cavalry troops and platoons participate in flank covering force operations as part of their parent unit. They reconnoiter, screen, attack, and defend as required.

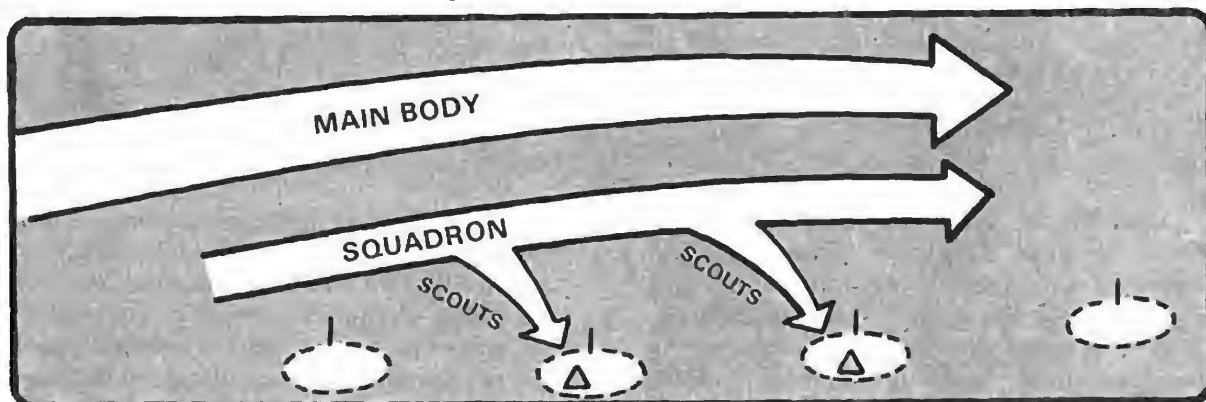
When the main body is advancing slowly, the squadron commander may direct the rearmost troop to bound forward to the next unoccupied battle position. This is the slowest but most secure technique.



When the main body is advancing steadily, the squadron commander may direct all troops in battle positions to advance, each moving to the next position. Scouts normally maintain contact with the enemy or maintain OP's while the rest of the squadron moves.



If the main body is moving rapidly and the squadron does not have enemy contact, the squadron may move continuously. It establishes OP's on each proposed battle position. This is the fastest but least secure technique.



ARMORED CAVALRY AS REAR COVERING FORCE

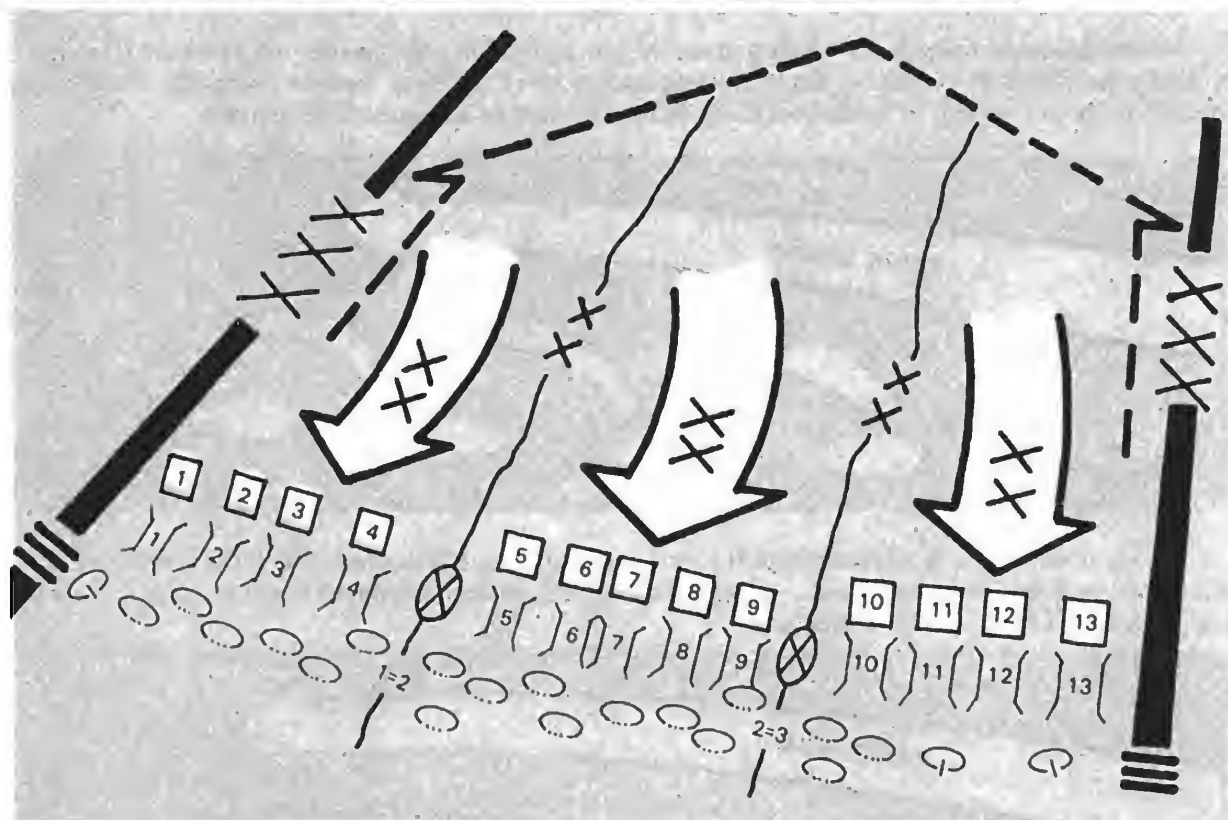
A rear covering force operation is conducted generally in the same manner as a covering force operation for a force deployed or deploying for defense.

Regiment. If the regiment is to be a rear covering force for a force moving away from the enemy, it first deploys squadrons abreast behind main body forward maneuver

units. This line may be to the rear of the main body's forward brigades or divisions. The determining factors are:

- Whether or not the main body is already in the process of disengaging.
- Space available.

ARMORED CAVALRY REGIMENT AS REAR COVERING FORCE FOR A FORCE MOVING AWAY FROM THE ENEMY (INITIAL PHASE)



Usually the regiment initially deploys behind forward divisions. Squadrons are instructed to establish passage points and help withdraw the main body (appendix D). From that point on, regiment conducts the operation in the same manner as a force deployed or deploying for defense.

Armored Cavalry Squadron. A regimental armored cavalry squadron normally participates in a rear covering force as part of a regiment. A squadron employed as part of a rear covering force deploys, defends, reconnoiters, and screens as required. A regimental armored cavalry squadron and the divi-

sional armored cavalry squadron, when reinforced, may act as a rear covering force for a stationary main body or for a main body moving toward the enemy or away from the enemy. In this case, the actions of an armored cavalry squadron parallel those of a

regiment.

Armored Cavalry Troop and Platoon. Armored cavalry troops and platoons participate in a rear covering force operation as part of their parent units. They reconnoiter, screen, and defend as required.

OFFENSE

The overall goal of offensive operations is to defeat the enemy's forces or destroy their will to resist. An attacker seeks a weakness in the enemy defense, concentrates overwhelming combat power against it, and attacks. Large units seek to pass through to enemy rear areas to destroy activities and installations which can't defend themselves. Cavalry units attack to accomplish one or more of the following:

- Develop enemy dispositions.
- Divert enemy attention.
- Dominate key terrain.
- Deprive the enemy of required resources.
- Destroy the enemy.

Types of Operations. There are three types of offensive operations. Cavalry units may conduct these operations or conduct security operations in support of other forces conducting them. They are:

- Movement to contact.
- Hasty or deliberate attack.
- Exploitation and pursuit.

Field Manuals 71-1 and 71-2, which cover tank and mechanized infantry operations at team and battalion task force levels, and FM 71-100, which deals with brigade and division levels explain these operations in detail and touch upon the part played by cavalry in each. Cavalry units frequently conduct hasty attacks as part of reconnaissance and security operations. They occa-

sionally conduct deliberate attacks, such as when it is necessary to create a separate penetration of enemy defenses to start flank guard or flank covering force operations.

Forms of Maneuver. A form of maneuver is the general orientation or direction of approaching an enemy. An enemy may be approached from the front or from some other direction. When approaching from the front the attacker seeks to *penetrate* the enemy, rupture his defenses, and pass through to his rear. When approaching from another direction, whether it be from one flank, both flanks, the rear, or some combination of these, the attacker is *enveloping* the enemy, causing him to fight in a new direction in which he is less ready to fight, or causing him to fight in multiple directions. Regardless of the form of maneuver, cavalry units try to concentrate overwhelming combat power at the point of decision.

Dynamics. To be successful in attacking and defeating the enemy, a cavalry commander must see the battlefield better than the enemy commander does. He must grasp the important aspects of terrain, enemy situation, and his own situation quickly and recognize opportunities as they arise. He must coordinate all organic and supporting fires to **suppress** enemy weapons.

He must **move** forces to concentrate against the weakest spot in enemy defenses and destroy the enemy through overwhelming assault by fire and maneuver. Successful attacks depend to a large degree upon an understanding of how enemy forces defend. This is described in detail in chapter 5.

MOVEMENT TO CONTACT

Cavalry units act as part of an advance covering force or advance guard when the larger unit is moving to contact. Route and zone reconnaissance are moves to contact. A cavalry unit seeks to make contact with the smallest possible part of its force, usually scouts, while the remainder of the unit is ready to fire or maneuver. Once contact is made, some other operation is required.

ATTACK

Cavalry units frequently conduct hasty attacks and occasionally conduct deliberate attacks.

Hasty Attack. A hasty attack situation can develop in several ways: movement to and contact with an enemy force not known to be in that location, as in route or zone reconnaissance; or movement to blocking positions in a guard or covering force operation. Small unit counterattacks are also hasty attacks.

When contact is made, fire and maneuver is the immediate action. Fire and maneuver is the logical extension of bounding overwatch with the important addition of direct fire by the overwatching element while the bounding element maneuvers to close with the enemy.

Once maneuver has begun, the cavalry commander must quickly determine whether the enemy can be defeated by hasty attack, or whether his size and posture require a carefully planned deliberate attack. There is no sure way to do this—it can't be done cautiously, and it must be done quickly. If the enemy force is large and in well-prepared positions, the cavalry unit may have to halt, adopt hasty defense, and prepare to do whatever the higher commander directs. This

may be to take part in a deliberate attack, to continue to defend, or to delay.

Actions on contact include:

- Returning fire.
- Deploying.
- Developing the situation.
- Reporting.

Due to normal dispersion of cavalry units, a regiment does not conduct hasty attacks. Squadrons do so infrequently. Troops conduct hasty attacks often and platoons conduct them very frequently.

As a cavalry platoon moves by bounds, the bounding element is usually fired on first. The overwatching element immediately returns fire to suppress or destroy enemy weapons while the bounding element seeks cover. The platoon leader must immediately develop the situation and report what he is doing. He may:

- Continue suppression while the bounding element maneuvers to the flank or rear of the enemy position.

—————OR—————

- Reverse roles so that the leading element takes up the suppression role while the trailing element maneuvers.

—————OR—————

- Order the entire platoon to fire while the troop commander maneuvers other platoons.

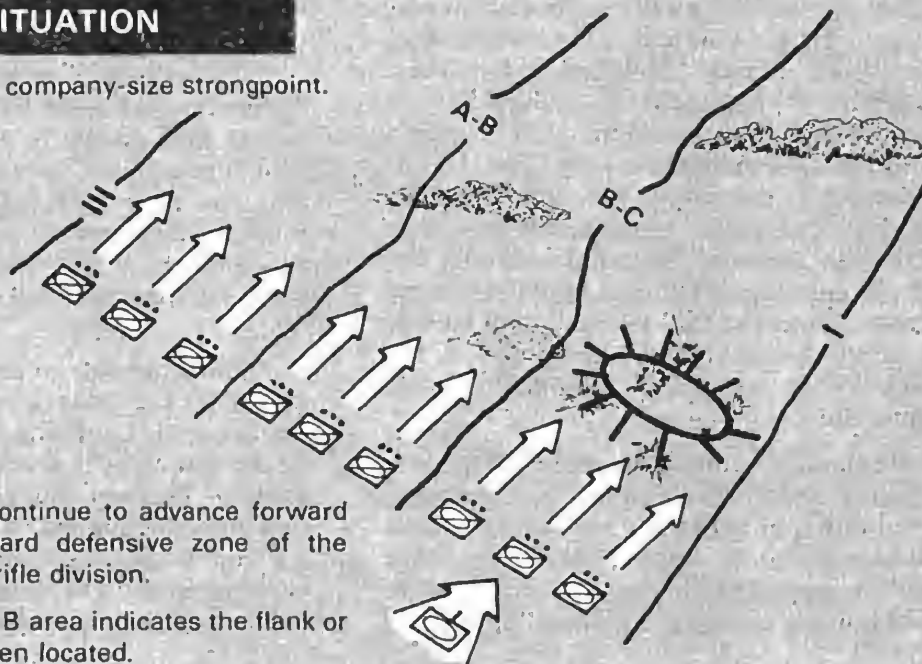
In all cases, a high volume of indirect fire should be immediately requested.

THE SITUATION

Troop C stopped by company-size strongpoint.

Troops A and B continue to advance forward through the forward defensive zone of the enemy motorized rifle division.

Situation in Troop B area indicates the flank or weak point has been located.

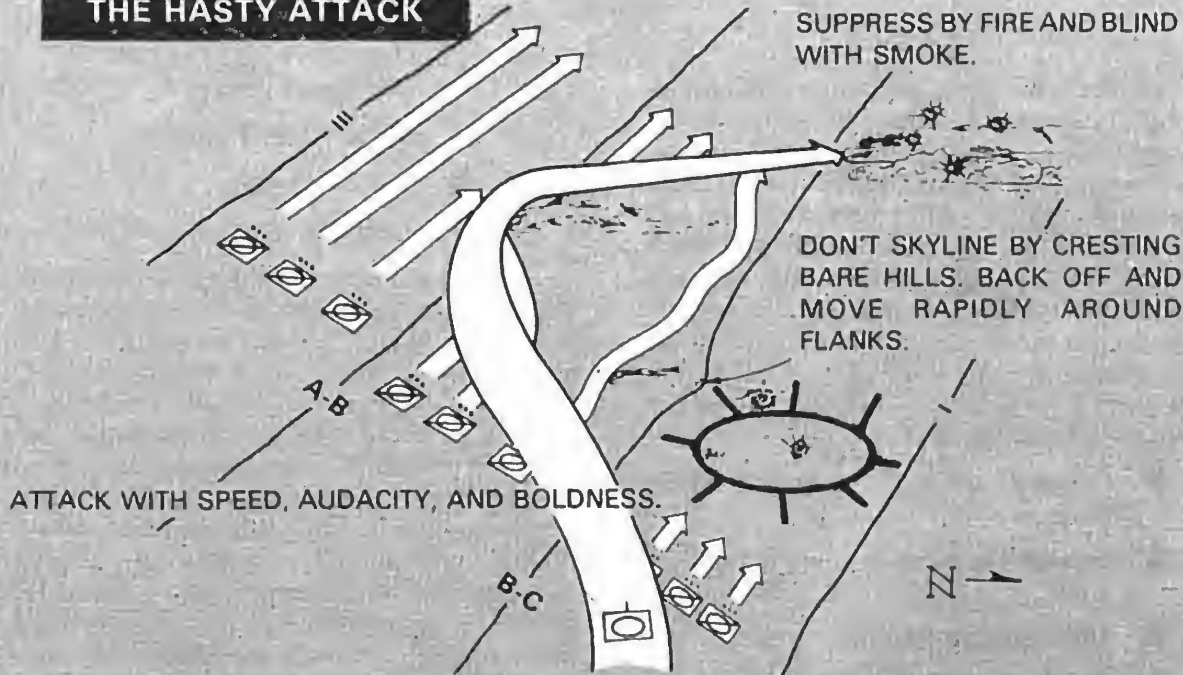


THE HASTY ATTACK

SUPPRESS BY FIRE AND BLIND WITH SMOKE.

DON'T SKYLINE BY CRESTING BARE HILLS. BACK OFF AND MOVE RAPIDLY AROUND FLANKS.

ATTACK WITH SPEED, AUDACITY, AND BOLDNESS.



Deliberate Attack. When it is necessary to overcome substantial enemy forces in prepared positions, cavalry units must pause, taking sufficient time to prepare, and conduct a deliberate attack. Detailed information about the enemy must be collected from higher, lower, and adjacent units, through patrolling, reconnaissance by fire, aerial photographs, prisoners, line crossers, electronic warfare, radar, sensors, and any other worthwhile sources. Information about terrain can be collected from many of these same sources. Leaders at all levels should look at the actual terrain in daylight, and if the attack is to be at night, they should view it at night also.

Platoons and troops usually participate in deliberate attacks as part of a larger force. Squadrons and regiments may attack alone or with other units. Divisional cavalry must have adequate artillery support provided by the division's artillery. Regimental cavalry

may need additional artillery support from divisional or corps artillery. Mortars are usually used in battery at troop level.

Tanks, light armor, and infantry form the nucleus of the force in a deliberate attack. Scouts may screen flanks, provide suppressive fire, or fight as infantry. Troop commanders may reorganize into light armor, infantry, and scout platoons, considering the enemy, terrain, and what must be done after the enemy is destroyed or driven off.

Bringing subordinate commanders together for the issuance of the attack order is an important advantage not available in hasty attacks. If the order is issued at a forward location, the commander can indicate points of interest on the ground as well as on the map. Face to face coordination eliminates any doubts or misunderstandings as to who does what, and when it is to be done.

EXPLOITATION AND PURSUIT

Exploitation and pursuit are the capstones of mounted warfare. They destroy the enemy's forces or their capability to resist. The enemy defends in belts, echelons, and lines of positions. After breaking through one, it is often necessary to move to and break through the next. The more rapidly this can be done, the less likely succeeding lines will be fully prepared. When the enemy has trouble maintaining overall continuity, exploitation and pursuit are ordered. Indicators that the enemy is in trouble are:

- General decrease in enemy resistance.
- Increase in number of enemy prisoners.
- Overrunning enemy:
 - Artillery positions.

- Command posts.
- Signal installations.
- Supply dumps.
- Supporting units.

Exploitation. The purpose of exploitation is to prevent the enemy from reconstituting an organized defense or conducting an orderly withdrawal. This can be done by rapidly advancing toward the enemy rear, bypassing small pockets of resistance, and destroying lightly defended and undefended installations and activities. Cavalry exploits the same way it moves to contact, readies to attack, and destroys vulnerable targets. Cavalry regiments may exploit alone but should be supported by additional artillery and engineers. Squadrons and smaller units normally exploit as part of a larger force.

Pursuit. The purpose of pursuit is to completely destroy an enemy force which has lost its ability to defend or delay in an organized fashion and is attempting to disengage and withdraw. Unlike exploitation, in which the objective is the destruction of the enemy support system, the objective of pursuit is the destruction of the enemy force. Pursuit operations require:

- A direct pressure force to keep enemy units in flight and thereby deny them any chance to rest, regroup, or resupply. This force conducts hasty attacks, and always maintains contact and forward momentum. The enemy is harassed, driven back, weakened, and attacked until he ceases to exist.
- An encircling force to envelop the fleeing force, cut its escape route, and

attack in conjunction with the direct pressure force to destroy the enemy force. This force moves as swiftly as possible by the most advantageous route to cut off enemy retreat. If necessary it adopts hasty defense behind the enemy to block it. Caught between two forces, unprepared and unable to defend, the enemy must surrender or die.

A cavalry regiment, with additional artillery and engineers, may pursue alone. At least one squadron maintains direct pressure while at least one squadron encircles. Air cavalry, attack helicopters, and airmobile infantry should be in the encircling force if they are available. Squadrons and smaller units normally pursue as part of a larger force. The movement techniques to contact and hasty attack apply.

OTHER OFFENSIVE ACTIONS

Counterattacks. Cavalry units of all sizes may counterattack. A regiment may occasionally be ordered to counterattack when it is operating as the reserve of a defending corps. Squadrons may counterattack when they are operating as a division or brigade reserve. It is more common for troops and platoons to counterattack within the context of a covering force, guard, defense, or delay operation, or to attack as part of a larger force. Large unit counterattacks are much like deliberate attacks in that some amount of time is normally available for

planning and occasionally for rehearsal. Small unit counterattacks are usually hasty attacks designed to destroy remnants of enemy units, clear areas for friendly maneuver, extricate other units, or divert enemy attention. Counterattacks can be conducted by fire only by relocating weapons, sections, platoons, or troops to maintain a range advantage (for example, keeping long range missile systems beyond effective T-62 range) or by relocating to fire into the flank of an enemy unit maneuvering against the previous position.

Actions in an Objective Area. Regardless of the reason for the attack, whether to secure an objective or blocking position, or to penetrate enemy defenses to start some other operation, an assigned objective must be consolidated and defended until other instructions are received. Consolidation refers to all actions taken to eliminate enemy resistance and to prepare to defend. After enemy resistance is eliminated and while preparing to defend, it may be necessary to reorganize. Casualties are evacuated, vehicles are repaired or evacuated, and ammunition is issued or redistributed. The unit reorganizes for combat as necessary. Air cavalry and attack helicopter units participate in consolidation only in the elimination of enemy forces, especially of forces trying to escape from the position. These units are not expected to defend. They normally withdraw to rearm, refuel, and if necessary, reorganize.

Actions at a Minefield or Other Man-Made Obstacle. When encountering a man-made obstacle, cavalry units must be alert for enemy weapons covering it. In the case of a minefield, the first indication of the presence of mines may be the detonation of one of them. If the unit is properly dispersed in traveling or bounding overwatch the overwatching element must immediately obscure enemy vision by placing smoke either on the minefield or on any vantage points not under friendly control. The commander then has a choice. He may elect to bypass, but he must realize that the obstacle may be designed specifically to canalize movement into a preplanned killing zone. He may elect to breach the obstacle. Minefields may be breached with flails or by hand. Other obstacles may be breached with demolitions, dozer blades, CEV, AVLB, or hand pioneering. Whatever the case, the dynamics of suppress and move apply.

DEFENSE

When it is necessary to defend, cavalry conducts an **active defense**. The active defense is designed primarily to fight successfully against greatly superior numbers of attacking armored vehicles with mounted or dismounted infantry, supported by artillery, protected by mobile air defense weapons, and also supported in varying degrees by armed helicopters and fighter aircraft. The concept of the active defense is to wear down the attacker by confronting him successfully and continuously with combined arms teams fighting from mutually supporting battle positions in depth throughout the battle area. Defending platoons, troops and squadrons maximize the effectiveness of their weapons by the selection of advantageous

positions and minimize their vulnerability by use of the terrain, concealment, and otherwise exploiting all the advantages of the defender. Antitank guided missiles are positioned to exploit their long range and pinpoint accuracy. Tanks are positioned to exploit their armor protection. Infantry may protect battle positions, as necessary.

As the enemy attack moves into the defended area, it should meet ever increasing fires from the front and especially the flanks. It should encounter constantly shifting defense forces taking maximum advantage of the terrain. It should encounter obstacles which cause the attack to stop or slow in areas covered by the defenders weapons.

When the enemy has been weakened and his forward elements are exposed, he should be destroyed by fire or, if necessary, by counterattack. Troops and companies may be ordered to counterattack exposed enemy forces or shift to better battle positions from where the enemy can be destroyed by fire. Counterattacks should be conducted so that the advantages of the defender are not needlessly surrendered. Whenever possible, counterattacking forces should move so that they are covered from enemy overwatching fires. Counterattacking forces may not need to close with the enemy to destroy him.

In order to slow the attack so there is more time to engage the large number of targets, the defender may find it necessary to hold certain terrain features for extended periods of time. When this is the case, the defender establishes a fully developed strongpoint around which the battle pivots. When the commander decides that a strongpoint is necessary, he should do so with the full understanding that a strongpoint will be subjected to massive enemy artillery suppression and enemy infantry assault. The strongpoint, therefore, will be difficult to extract, and casualties will be high. Consequently, in the active defense, the strongpoint is the exception not the rule. However, when it is necessary to establish a strongpoint in order to accomplish the mission, the commander should not hesitate to do so.

Armored Cavalry. An armored cavalry unit defends when:

- The strength of the enemy encountered during a reconnaissance mission prevents advance and main body units are moving forward to attack.
- Conducting security operations.
- Containing a penetration.

- Filling a gap between main body units.

Defense by armored cavalry is dynamic. It is based on fire, maneuver, and destruction of the enemy. This is done by using all available firepower, including attack helicopters and close air support. Although enemy intentions are seldom initially known, they must be rapidly determined. This is done by destroying or brushing away the enemy's reconnaissance screen, forcing deployment of his advance guard, and subsequently shifting available firepower and maneuver forces to destroy each echelon before it can be reinforced. To what extent this is done depends on the mission assigned the cavalry unit. For instance, a covering force must force first echelon regiments to deploy before reaching the MBA. On the other hand, a defending guard force usually can't do more than force deployment of the enemy's advance guard.

A defending cavalry unit will almost always be outnumbered. The force ratio may be 1:4 or 1:5 initially and get worse as the enemy deploys its first echelon regiments. In order to win, enemy forces must be destroyed at an exchange ratio higher than the force ratio. For example, if the unit is outnumbered 1:7, it must destroy 7 or more of the enemy for each loss of its own in order to win. The keys to survival and success are using terrain for protection, maneuvering forces rapidly to points of decision so that the ratio is no greater than 1:3 in any engagement, and massing firepower for short, violent periods. More damage can be done with less risk if 10 weapons deliver three shots each than if five weapons deliver six shots each. The reason is that the longer a firing position is used the greater the volume of return fire. Success using this system requires plenty of maneuver space, aggressive reconnaissance, and active use of all sources of information.

Phase lines are used to designate the forward edge and the rear of a cavalry unit's battle area. Phase lines are also used within a battle area to designate a line to help control forward movement, or behind which a unit (regiment through squadron) can't withdraw without permission of the designating commander.

For example, a regiment's battle area can be subdivided by the commander assigning the mission into belts 10-15km deep using phase lines. The regimental commander is free to fight the battle forward of these phase lines, but he can't withdraw behind them without permission of the designating commander. The regimental commander, in turn, designates phase lines in each belt of about the same depth as an armored cavalry squadron's battle area during a guard mission (5 to 10km). Each squadron is free to fight the battle forward of these phase lines, but it can't withdraw behind them without permission.

An armored cavalry squadron organizes each belt by designating troop battle positions. Battle positions provide orientation and designate areas of responsibility. Whenever possible, and if time permits, troop and platoon battle positions are planned, reconnoitered, and prepared three deep.

Battle positions may be used to block the enemy, deny access to a specified area, and retain terrain or to engage with a specified number of shots and move before the enemy can return effective fire. In any case, the squadron commander tells the troop commander to occupy certain battle positions, and to do the following:

- Engage the enemy and be prepared to move immediately after the engagement.
- Prepare to attack.

- Hold or control a specified location.
- Defend for a specified period of time.

A cavalry unit frequently assumes a hasty defense during a reconnaissance or security mission when it encounters an enemy force which can't be destroyed or bypassed, or during consolidation of an objective or blocking position. A hasty defense usually has to be fought with what is at hand plus available artillery, air cavalry, attack helicopters, and close air support.

A cavalry unit, when assuming a hasty defense, is initially able to do little more than halt enemy forward movement.

- If the unit's not in enemy contact, it deploys to terrain in the immediate area which provides best cover, concealment, and long range fields of fire.
- If the unit's in enemy contact, it uses techniques of bounding overwatch as necessary to disengage to the extent required to occupy defensible terrain, or as is often the case in the desert, to trade space for time while continuing to wear down the enemy.

The success of a hasty cavalry defense depends on the initiative and the actions at the troop and platoon level, the shifting and massing of fire support, and the use of close air support, air cavalry, and attack helicopters at troop through regiment level. Squadron and regiment must rapidly analyze the situation to determine areas of primary enemy thrusts. This can only be done if timely, accurate reports are received and the respective commanders and staffs know enemy tactics and organizational structure. Once these areas have been determined, squadron and regiment can place tank and mechanized infantry teams, if available, in positions astride the major approaches.

The closing and staying power of tank/mechanized infantry forces may also be used to reduce pressure on armored cavalry troops by attacking an advancing enemy force from the flank. This action must be closely coordinated with troops in contact. It is desirable to use smoke and suppressive fires against possible enemy overwatch positions. If the battlefield is fluid, as is generally the case in a cavalry environment, air cavalry should prevent attacking forces from blundering into the enemy's overwatching fires. It may not be necessary to physically close or run through the enemy force. The intention is to catch the enemy by surprise, divert his attention, destroy him, and move rapidly to another position. This permits tank/mechanized infantry forces to be committed again in a different area. The same result can be accomplished with air cavalry and attack helicopters. When an armored cavalry troop or platoon strikes an enemy flank, it should attack by fire. Tank and mechanized infantry can attack by fire and maneuver, sweeping through the remnants of an enemy force to destroy them completely and to retain freedom and maneuver in the defensive area.

Air Cavalry. Air cavalry is not assigned an area to defend. Air cavalry is best used during the defense to reconnoiter, screen, and act as a rapid reaction force. The flexibility and mobility differential of an air cavalry unit permits its mission to be rapidly changed. These factors, coupled with long range, standoff, organic direct and indirect fires, and the ability to use all available suppressive fires frequently result in air cavalry operating with ground maneuver units, until the situation can be stabilized, or until ground maneuver units can react. Air cavalry is extremely valuable on the armor battlefield as a rapid reaction force. Air cavalry, when committed as a rapid reaction force, uses aeroscouts to find the enemy and occupy firing positions to the flanks and the

rear of the enemy. Emphasis is on *not* engaging the enemy head on. Enemy engagement is discussed in chapter 5.

REGIMENT

A regiment normally defends with three squadrons abreast. A regiment defending as a covering force for a force deployed or deploying for a defense is discussed on page 6-29. A regiment forced to defend while conducting a covering force mission for a moving force uses the same techniques. The difference is that the depth of the regiment's maneuver space is usually limited by the commander assigning the mission. A regiment defending a gap between main force units bases its control measures and scheme of maneuver on those of the adjacent unit. This may result in a regiment's freedom of maneuver being restricted. Any defensive situation which limits a regiment's freedom of maneuver is undesirable because the regiment does not have the staying power of tank/mechanized infantry task forces. A partial solution is to reinforce a regiment with tank/mechanized infantry task forces, and to place other nonorganic air cavalry and attack helicopter units under operational control of the regiment. ★

Conduct of the Defense. The regiment retains a reserve. It may be attached tank/mechanized infantry, or may be constituted by requiring squadron commanders to obtain permission to commit their tank companies or attached tank/mechanized infantry teams.

The defensive operation of a regiment, squadron, and troop must be ACTIVE, not passive or fixed. Positions are occupied, abandoned, and reoccupied according to the development of the situation. Hasty attacks are executed by uncommitted forces whenever an opportunity exists to inflict great damage without major risk. Counterattacks must sometimes be launched to maintain the

integrity of the defensive system. The intention is to sweep through or rapidly concentrate standoff firepower for the quick destruction of an enemy force. A counterattacking unit must quickly complete its mission, reoccupy battle positions, and prepare to meet the next echelon. A counterat-

tacking unit must not blunder into the open under overwatching fires of the enemy or enter head-on battles at unfavorable ratios. Air cavalry and attack helicopter units will ★ attack within the defensive posture of the regiment and deny the enemy use of terrain for extended periods of time.

ARMORED CAVALRY SQUADRON

An armored cavalry squadron usually defends with three troops abreast. Whenever possible, a reserve is designated. In a regimental squadron, it is usually the squadron's tank company or an attached tank/mechanized infantry team. In a divisional armored cavalry squadron, the reserve may be an attached tank/mechanized infantry team or the air cavalry troop.

Conduct of the Defense. Since the squadron must fight an armor and mechanized Threat force, the defense is organized three positions deep for all subordinate units. A squadron does this by designating battle positions astride the most dangerous avenues of approach. A squadron is free to shift units between positions within a specified belt or area. Unit designations are not placed on positions. A troop designates platoon battle positions three deep. The selection of these positions is based on engaging the enemy and on preparing for the unexpected. If an area

can't be observed or covered by fire from platoon battle positions, it is screened. Each platoon is assigned several battle positions to provide flexibility to the defense, and to permit reaction to unexpected situations and/or concentration of direct fires for a specific engagement. These positions are reconnoitered and prepared as time permits. Hasty obstacles are prepared and fires are planned to help canalize the enemy into selected locations. Surprise, massed fires, target destruction, and shooting first are of great importance.

The discussion of the operation of a squadron with an air cavalry troop begins on page 6-55; the operation of a squadron with a tank company or tank company team is discussed on page 6-58; and the discussion of the operation of a squadron with an organic or attached howitzer battery begins on page 6-58.

ARMORED CAVALRY TROOP AND PLATOON

A troop occupies and fights from battle positions normally designated by the squadron commander. Troops are generally given mission-type orders, such as: OCCUPY AND DEFEND FROM BATTLE POSITION 55. Sometimes the order will be more detailed; it will specify the avenue of approach to be covered and give some idea of what the next move might be. For example: BE PREPARED TO MOVE ON MY ORDER TO BATTLE POSITION 56 OR 57. I AM

GOING TO TRY TO TRAP THE ENEMY BETWEEN BATTLE POSITIONS 58 AND 60.

When a troop is directed to develop and occupy a strong point, it must develop the position in detail to withstand direct assault. The troop improves the terrain, prepares covered positions, and plans massive defensive fires. Strong points, however, are the exception not the rule.

Platoons reconnoiter, prepare, and occupy positions as directed by the troop commander. Commanders at all levels, including platoon, should plan ahead at least three moves. Therefore, when time permits, a platoon reconnoiters, prepares, and occupies one position; reconnoiters and prepares a second; and reconnoiters a third. If more time is available, a platoon reconnoiters and prepares additional positions. In most cases, platoons or sections occupy battle positions to deliver surprise fire to the front, flank, or rear of an enemy at optimum range and then move before the enemy can return effective fire. Emphasis is on concealment, with terrain masking units from overwatching or following enemy echelons. However, when it is clear from the beginning that a position is to be held at all cost, then it is prepared in great detail. Since platoons must withstand extensive enemy fire, they must fortify as much as possible.

Scout squads establish OP's for early warning and operate as during a screening operation. The scout squad creates hasty obstacles, such as blowing down trees, cratering roads, and hastily setting antitank mines to help slow and canalize the enemy into target areas. Before leaving an area without enemy contact, each platoon must retrieve or report the location of mines to troop. This information is reported, in turn, through the chain of command. Range cards are prepared for each battle position. A platoon occupies or moves from a battle position only on order.

As battle starts, the first task is usually to eliminate enemy reconnaissance elements. As the situation develops, the enemy may saturate a defended area with artillery fire and attack with main battle tanks. ✓

If the platoon is blocking, retaining terrain, or denying the enemy access to a specified area, it will open fire at a maximum possible range. Field artillery may shoot fires if the enemy can be observed beyond direct fire range. As the enemy moves closer, he is engaged by other weapons systems, each at its maximum range. The enemy is subjected to heavier volumes of fire as he comes closer. *If the platoon is not concerned with blocking or retaining terrain, it may open fire when the enemy force is in a predesignated engagement area or near a target reference point.* Direct fires are delivered at optimum ranges and are delivered as rapidly as possible to capitalize on the first-shot advantage. Before the enemy can react (usually after two or three shots in daylight, perhaps more at night) the platoon moves to cover. Field artillery fire may be used *before* direct fire in order to button up the enemy and further restrict his response, *during* direct fire to confuse the enemy as to the type and direction of fire and destroy lightly armored vehicles, and *after* direct fire engagement to cover platoon movement. Field artillery fire may be used all three ways or in some combination. Successive engagements should be conducted in some variation.

DISENGAGING

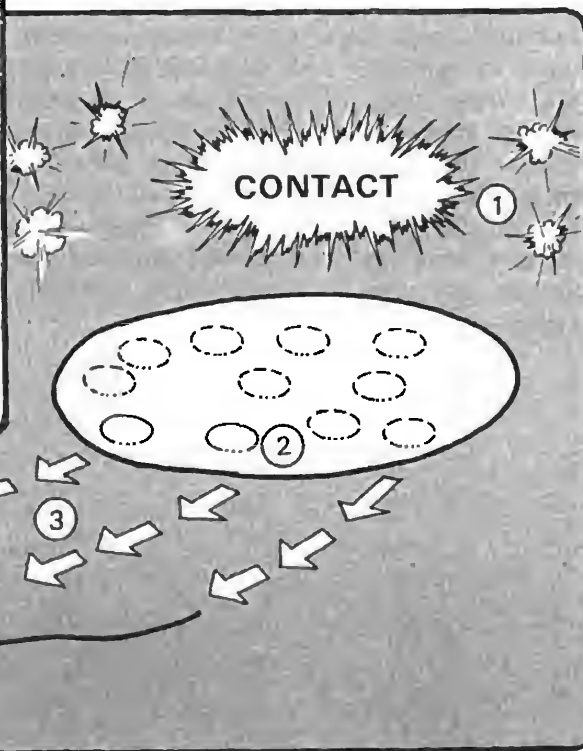
Cavalry units must frequently disengage. Before disengaging, all but essential combat support, combat service support, and command and control elements should be withdrawn behind friendly units or to appropriate positions behind successive positions. The most difficult problem is freeing troops and platoons from enemy contact. Instructions for disengaging should include:

- Routes of withdrawal for each platoon and troop.
- Time or periods artillery fires will be intensified.
- What a troop or platoon is to do after disengaging.
- Contact and passage points, if withdrawing through friendly lines (appendix D).

- Time disengagement is to start.
- Time elements, other than platoons, are to withdraw.

How a cavalry unit disengages depends on the situation. If the enemy main battle tanks and/or BRDM's with Sagger's have closed to less than 3,000m, the cavalry unit's withdrawal must be covered by long range direct-fire antiarmor weapons systems. Before actual disengagement starts, artillery and other nonorganic fires, including smoke, may be intensified, then returned to normal levels. This has several benefits:

- ① A high intensity of suppressive fires is delivered.
- ② One scout squad and one tank are left in contact.
- ③ The platoon(-) moves rapidly to the rear.
- ④ When the platoon has cleared the area, the remainder withdraws on the platoon leader's order under cover of suppressive fires.
- ★ ⑤ Air cavalry may provide security by overwatching the disengaging ground cavalry units.



- It helps suppress the enemy.
- The enemy becomes accustomed to periodic intensification to cover breaking of contact.
- Use of nonorganic fires conserves the organic weapons' ammunition.
- If the enemy decides that the initial intensification of supporting fires is to mask the breaking of contact, his actions may become rash. This allows the cavalry unit to destroy more of the enemy.

★ If the enemy decides disengagement has started and attempts to follow, the tanks in position momentarily disconcert him, thereby, gaining time for moving elements. Disengagement of the tanks, in turn, must be accomplished quickly. Since the situation varies across a squadron's front, and because of communications considerations, these forces are usually moved by platoon leaders. The process is repeated as necessary. Once disengagement by cavalry starts, it must be completed rapidly. Disoriented platoons and teams are destroyed unless remedial measures are taken quickly. If disoriented, it is usually best to move toward the designated position or passage point without trying to find a specific trail or route in the forward area.

If the enemy does not have main battle tanks and/or BRDM's with Sagger's within

3,000m, it may be possible to move all units simultaneously under the cover of intense artillery fires, including smoke. Speed and coordination are essential. If the unit must converge on and pass through choke points, then part of the unit must halt and organize a battle position before reaching the choke point. The purpose of this position is to protect the movement of the remainder of the unit. In this case, the unit assigned the battle position may have to disengage by the method described above.

★ When a platoon is to engage with a specified number of shots and move before the enemy can return effective fire, disengagement is a planned part of each engagement. Some element must be left in position to observe the enemy reaction and to control indirect fires. While the rest of the platoon moves to cover, the scouts or troop commander or platoon leader who can see the enemy decides whether the enemy has detected the platoon location. If the enemy has not, then the platoon may reoccupy and re-engage as before. If the enemy has detected the position, then it should not be immediately reoccupied since the enemy will place direct and indirect fire on it in sufficient quantity to suppress anyone there. The observer in either case controls artillery and mortar fire. He shifts, stops or continues such fires as necessary to cover platoon movement and destroy the enemy if possible.

DELAY

Delay is one of the most demanding and common actions a cavalry unit can undertake. Delaying actions are part of many other operations and are especially common for covering and guard forces.

A regiment covering wide frontages without additional maneuver units may be given a delay mission. Squadrons may be assigned to cover areas from which tank and mechanized infantry task forces have been

withdrawn for concentration elsewhere. Frontages may be up to 25km wide in such cases. When this occurs, squadrons can't defend and therefore must delay.

Whether or not a time limitation is stated in the mission, time is a major consideration in how delaying actions are conducted. The mission may specify, for example, that enemy forces are to be held forward of a location or line for a given amount of time, such as 8

hours or 48 hours. Or the mission may specify that enemy forces have to be impeded as much or as long as possible, with no time specified. Implicit in this mission, however, is the idea that the use of the cavalry unit is an economy-of-force measure until some other event takes place. The cavalry unit must prevent an enemy penetration for as long as possible while other forces seek a decision elsewhere on the battlefield or until other forces are available to seek a decision over the enemy being held up by the cavalry unit.

The overall purpose of delay is to force the enemy to take the time to concentrate, again and again, against successive battle positions, so that he must cope with each in turn. Just when the enemy has everything organized, his artillery is starting to fire and his ground units are starting to maneuver, the delaying force moves to its next set of battle positions. The enemy must then go through the same time consuming process again and again.

A delaying force must:

- Destroy as much of the enemy as possible.
- Cause the enemy to plan and conduct successive maneuvers (this gains time).
- Preserve the integrity of the battlefield by always staying between the enemy and the place he is trying to go.
- Preserve the freedom to maneuver, for once pinned by enemy fire and maneuver, the cavalry unit will be bypassed, penetrated, and/or destroyed.
- Preserve the force. Failure in this task leads to failure in the other four.

Delaying actions are demanding in the sense that balancing these five tasks requires

a high degree of skill in commanders at all levels. At regiment and squadron the commanders must ensure that the first two tasks are maximized without risking the disaster possible if they fail in the last three. At troop and platoon level, weapons, terrain, tactical mobility, and tactical sense must be constantly under control.

Delay under Low-Risk Conditions. The squadron or regimental commander may specify a low degree of resistance when it is vital to preserve the combat effectiveness of the delaying elements. In this situation, the commander's intention is to delay the enemy as much as possible while ensuring the survivability of the team conducting the delay. A delay trades space for time. Normally, this type of mission is given where the terrain inhibits enemy movement and where enemy movement can be further obstructed by easily emplaced obstacles, such as air- or artillery-delivered mines or demolition-type obstacles.



In a wide sector, a troop commander may be forced to use the scout and various STANO devices to maintain surveillance and contact with the enemy across the entire front. When the enemy is detected, contact is maintained and delay is achieved by long range ATGM's, indirect fires, air- or artillery-delivered mines, and air-delivered antitank fires.

The commander masses his available assets and starts ground contact and delay at the most opportune time. Ground contact normally takes the form of multiple long range engagements from battle positions. When the squadron or regimental commander specifies a low degree of risk, he does not

expect the delaying force to hold a position indefinitely, nor become overrun. He is kept informed as to the enemy strength and disposition so he can make timely decisions affecting the overall conduct of the battle. The decision to withdraw from each battle position is normally made by the troop commander. The squadron or regimental commander controls the operation by using phase lines.

Delay under High-Risk Conditions.

When the squadron or regimental commander accepts a higher degree of risk, the delaying element may be directed to hold the enemy forward of a line or location for a specified time, accepting whatever risk is necessary to accomplish the mission. Part of the delaying force may have to hold its position until told to move.

When the mission is in terms of time, the unit is normally given delay lines and must hold the enemy forward of these lines for a specified time. The delaying force may have to accept decisive engagement and risk becoming overrun in order to accomplish its mission.

The mission will specify the amount of time and/or location(s) an enemy force must be delayed. The order may be:

- HOLD THE ENEMY WEST OF HIGHWAY 45 UNTIL 0900 HOURS.
————— OR —————
- KEEP THE ENEMY NORTH OF BLUE RIVER UNTIL OBJECTIVE HAMMER IS SECURE.
————— OR —————
- HOLD THE ENEMY NORTH OF HIGHWAY 20 UNTIL 071900, THEN WITHDRAW AND HOLD THE ENEMY NORTH OF RED RIVER UNTIL 082100 HOURS.

A continuous, accurate flow of informa-

tion must pass from troop to squadron and/or squadron to regiment. If "slow the enemy" and "preserve the force" come into conflict, the cavalry commander must inform his immediate commander. The commander then has the choice of:

- Accepting less time in exchange for preserving the force.
————— OR —————
- Obtaining the time, but risking the loss of part or all of the delaying force.

Cavalry troops fight from battle positions to block the enemy advance. When required to move, they use the techniques previously discussed to disengage. Delaying forces must maintain a mobility advantage over the attacker. This is done through the use of obstacles and superior knowledge and use of the terrain. During the delay, they position to expedite their withdrawal and make the best use of covered withdrawal routes. Once movement begins, it is necessary to coordinate with adjacent units to prevent exposing a flank.

The cavalry commander deploys his elements in battle positions along the enemy's main avenues of approach. Maximum firepower is forward. As the main Threat force becomes more obvious, elements are redeployed as necessary to slow or block the enemy advance. The action is conducted much like defense, except frontages are normally wider. Obstacles should be created or strengthened whenever possible. All available indirect fires should engage the enemy at maximum range, taking advantage of range differential (if any) over the attacker's weapons.

Terrain to be occupied by a delaying force may be abandoned only with permission of the next higher headquarters. When the

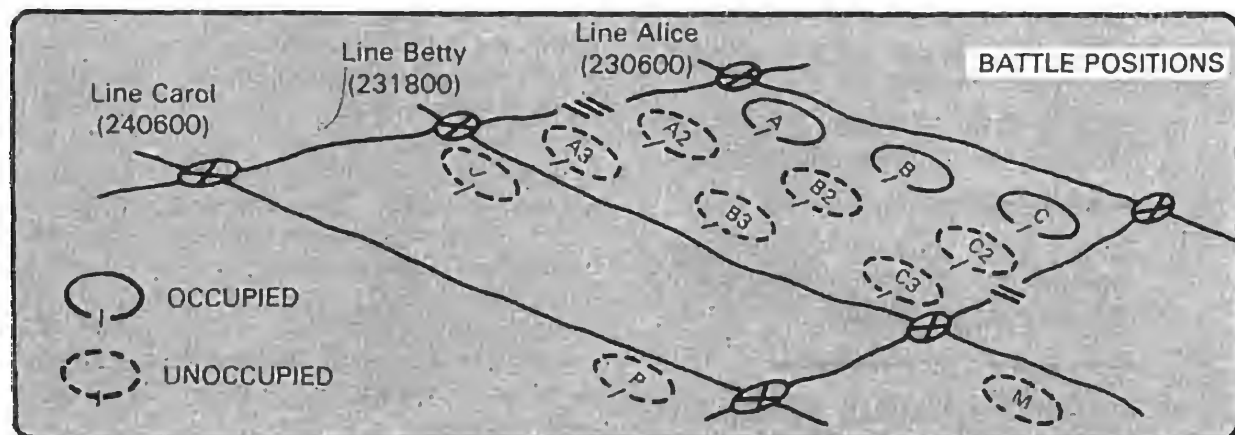
delaying force selects its own positions and delays in sector, it must continuously report the location of its elements to the commander. Part of the force must maintain contact to

support the movement of other elements to new locations. Counterattacks by fire may be necessary to help disengage platoons and troops.

HOW TO CONDUCT DELAYING ACTIONS

Control of delaying actions is centralized to the extent necessary to preserve the integrity of the battlefield, but decentralized for execution of all other purposes. As noted in other sections, the higher commander or regimental commander usually designates a series of lines. These may initially be phase lines, but when delaying actions start, the lines become delay lines. When a time has been specified for the overall operation, each line may be labelled with a time to serve as a guide for progress of the operation. Such a time designation indicates a proposed not-earlier-than time. If enemy action permits, positions along these lines *may be held much longer*. If no time has been specified for the overall operation, these lines may be used the same way any phase line is used; that is, to help control the operation by providing linear references across the battlefield.

Delaying units normally occupy battle positions which are optimized for frontal observation and frontal, long range direct fires. Cover and concealment are desirable. Routes out of positions which permit relocating units to move under cover to the next battle position are highly desirable. While higher commanders may designate general or specific positions along delay lines, these lines are usually separated by many kilometers. Units must fight between them to extract the greatest possible toll from the enemy and cause him to maneuver extensively. Therefore, successive battle positions for platoons and troops should be within overwatch distance of each other. As in defense, each commander should plan three moves, three actions, or three positions deep.



In the illustration above, the regimental commander has planned at least three deep as shown by delay lines Alice, Betty, and Carol and by the battle positions lettered A, J, etc. that he has directed. The commander

normally designates delay lines and may or may not also designate troop battle positions. The designation of battle positions tends to restrict squadrons.

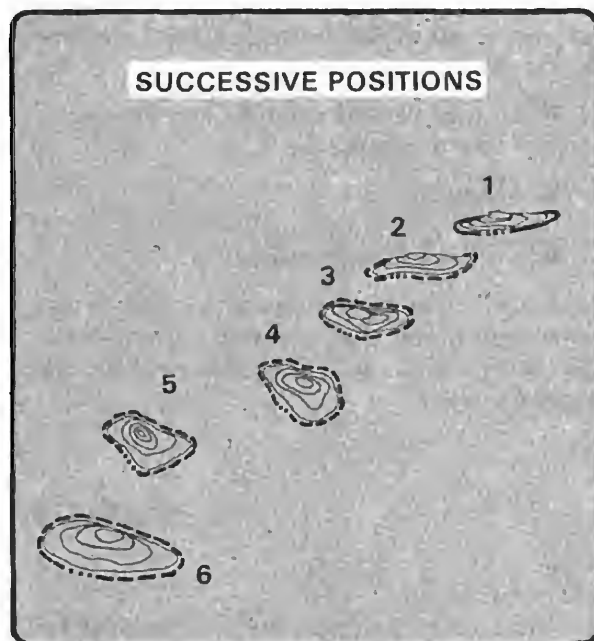
The squadron commander has planned three deep as shown by the battle positions labelled A2, B3, etc. he has indicated between delay lines. He could have added delay lines of his own within his sector. Troop commanders also plan at least three positions deep as shown by the platoon battle positions indicated in and behind A and B. Troop commanders do not normally establish delay lines since they must be more specific in designating where platoons will locate.

★ When an approaching enemy is observed, he is taken under fire. It may be aeroscouts who first see the enemy. They call for and adjust artillery fires. As the enemy moves to ground units, the units open fire at long range. Usually tanks and heavy anti-tank weapons will be the first direct fire weapons to engage. By the time enemy forces have closed to within the range of medium antitank weapons, the ground unit should be ready to move to its next position. This is the critical time in a delay. Commanders must weigh the desire to further wear down and impede the enemy against the risk of having the cavalry unit pinned, penetrated, and destroyed. Moving a unit too soon may not accomplish the mission. Moving it too late may disrupt the integrity of battle lines and lose the force. In the rapid flow of a delay, units must not be permitted to shoot too little, abandon positions too soon, or move back too far.

Movement between positions should be covered by terrain and by the fire of some part of the unit. This movement is fire and maneuver away from the enemy. Fire and maneuver may be within platoons or within troops. Rarely will one troop be able to overwatch another due to wide dispersion.

Most often, units occupy *successive positions*. Starting in position 1, a part of the unit moves to position 2 while the remainder continues to fight from position 1. When position 2 is occupied and weapons are in

position to overwatch, position 1 is vacated and the force there moves to join the other at position 2.



Sometimes a unit can fight from *alternate positions*. A part of the unit moves to position 2 and when it is in position the remainder moves from position 1 to position 3. When the force in position 2 must move, it goes to position 4. Wide frontages and lack of forces do not normally permit fighting from alternate positions.

The difference then is that in successive positions a given squad or section fights from 1, 2, 3, and 4 in order. In alternate positions that same squad or section might fight from 1, 3, 5, while others fight from 2, 4, and 6.

Normally units do not abandon a position without the permission of the commander who designated that position. However, under conditions of a high EW Threat environment or when communications have been lost, a subordinate commander must use his initiative to act according to the concept of his immediate commander.

AREA SECURITY

The purpose of area security operations conducted by cavalry units includes protecting one or all of the following from ground attack:

- Units behind the rear boundaries of forward brigades.
- Installations.
- Lines of communication.

In all cases, the cavalry unit must coordinate plans and maintain communication with units and installations in the assigned area.

A cavalry unit committed to area security must not develop a garrison environment. Cavalrymen must continue to live with their vehicles. An area security operation, like all other security operations, requires around-the-clock vigilance. Area security missions may be assigned an armored cavalry regiment, armored cavalry squadron, or troop. Air cavalry should reconnoiter, screen, and serve as a rapid reaction force. An air cavalry unit may also be the reserve or part of the reserve.

The Threat may be airborne, airlanded, guerrilla, infiltrator, or breakthrough forces.

TACTICAL REQUIREMENTS

An area security mission, depending on respective sizes of the area and the cavalry unit, may involve one or all of the following:

- Protection of installations and units.
- Protection of lines of communication.
- Denial of drop or landing zones.
- Finding, fixing, and destroying stay behind, infiltrator, and guerrilla forces operating to the rear of forward brigades.
- Actions against enemy penetrations.
- Area damage control operations, chemical agent detection, radiological monitoring and survey (appendices I and J).

Protection of Installations and Units. A cavalry unit required to protect an installation or unit from ground attack establishes perimeter defense to provide all-

round protection. The cavalry unit deploys in a circle around the protected installation or unit. Usually a perimeter is organized as a screen with a stronger line inside. An armored cavalry troop is the smallest cavalry unit assigned this mission.

Protection of Lines of Communication. Both flanks of the route are screened. Air cavalry elements may reconnoiter and maintain surveillance. The remainder of the cavalry unit may reconnoiter, escort convoys, or position for rapid reaction.

Denial of Drop or Landing Zones. When protecting an area against enemy airborne or airmobile forces, a cavalry unit reconnoiters to select likely enemy drop and landing zones. OP's are established to keep these areas under continuous observation. Radar ensures surveillance at night and during other periods of reduced visibility. Parts of the cavalry unit not manning OP's position for rapid reaction to any Threat force.

The important thing is to provide early warning and rapid reaction forces for immediate commitment. Every attempt is made to destroy airborne and airmobile forces before they can leave drop or landing zones. This may be done with indirect fires controlled by OP's and supplemented by hasty attacks. Air and armored cavalry units attack as they arrive. There is no waiting to mass combat power. In an attack against airdropped or airlanded forces, emphasis is on attacking with whatever is immediately available, whether it be two helicopters, two tanks, or a squadron.

Finding, Fixing, and Destroying Stay-Behind, Infiltrator, and Guerrilla Forces Operating to the Rear of Forward Brigades. The primary objective of enemy stay-behind, infiltrator, and guerrilla forces operating to the rear of forward brigades is to:

- Restrict or stop the flow of supplies, troops, and equipment to and within the combat zone.
- Disrupt communications.
- Interfere with friendly operations.

These forces attempt to destroy bridges and main lines of communication, ambush convoys, and attack small units, headquarters, and installations. They attempt to strike friendly forces where they are weak. They try to capitalize on surprise, quick action, and rapid movement.

A cavalry unit must watch its entire area. Enemy forces can often be found by aggressive reconnaissance; rapidly fixed in place by fire and maneuver; and destroyed

with overwhelming combat power. Emphasis is on destroying the enemy force in place.

If the area contains civilians, a strict curfew must be enforced. For further information, see FM 30-102, FM 31-85, FM 41-10, and FM 90-8.

Actions Against Enemy Penetrations. Speed and violence are common to armor battlefields and make old concepts of a rear area obsolete. Enemy forces attempt to break through forward brigades and attack to destroy artillery units, communication centers, and headquarters. Sometimes, these forces act in concert with airborne or airlanded forces. A cavalry unit must quickly engage and destroy airborne or airlanded forces with firepower as it becomes available. Piecemeal commitment when engaging penetrating forces is common. On the other hand, penetrating forces are heavy in armor. Therefore, a cavalry unit must be ready to mass combat power to engage, counterattack, or block a penetration. This requires contingency planning followed by reconnaissance and organization of battle positions. Counterattack routes must be planned and reconnoitered. Unit rehearsals of contingency plans are desirable. As in all situations, the cavalry unit uses terrain to best advantage. Air cavalry elements can often be used to gain information required for armored cavalry to most effectively react. Air cavalry aeroweapons firepower can often wear down and slow breakthrough forces in order to gain time for armored cavalry and other maneuver elements to mass. As in all combat, indirect fires are used for suppression, and close air support is used to help destroy the enemy.

ACTIONS OF A CAVALRY UNIT ASSIGNED AN AREA SECURITY MISSION

A cavalry unit commander assigned an area security mission first reconnoiters his assigned area to determine key terrain; location of installations; likely enemy drop and landing zones; likely basing areas for stay-behind, infiltrator, or guerrilla forces; and probable avenues and objectives of breakthrough forces. The commander supplements his reconnaissance by studying intelligence reports and then plans the:

- Surveillance of the area.
- Control of the civilians in conjunction with other agencies and forces.
- Protection of critical installations and lines of communication.
- Alert and warning systems, including periodic checks of communication systems and alert procedures of units, activities, and installations in the area.
- Reaction forces, available to concentrate quickly against:
 - Airborne and airlanded forces.
 - Guerrilla, infiltrator, and stay-behind forces.
 - Breakthrough forces.

Deployment of Cavalry for Area Security. Armored cavalry assigned an area security mission may establish a defense. An area too large or crowded for this method is covered by observation posts and patrols backed up by reserves prepared for rapid commitment. Reserves may be centrally located, or located in small groups throughout the area.

Regiment. A regiment accomplishes area security missions by assigning areas to squadrons. Regimental boundaries are usually the boundaries of the force for which the

mission is conducted. Regiment assigns squadron sectors based on the Threat and mission requirements. A regiment is rarely reinforced for an area security operation, but it retains a reserve. It may be an armored cavalry troop, one or more of the squadron tank companies, or all of these. Units organic to squadrons designated as regimental reserve are usually left with their parent squadron. A squadron can't commit such a unit without the permission of the regimental commander.

Armored Cavalry Squadrons. An armored cavalry squadron accomplishes an area security mission by assigning sectors and/or missions to subordinate elements as it does during other tactical operations. It is rarely reinforced when assigned an area security mission. A divisional armored cavalry squadron may be required to conduct area security missions in the division rear. A regimental squadron normally conducts area security as part of a regiment.

An armored cavalry squadron also retains a reserve. In a regimental squadron, it is usually the tank company, although it may be designated as part of the regimental reserve. When the divisional armored cavalry squadron can't maintain a centrally located troop in reserve, the squadron can still have a reserve by requiring each armored cavalry troop to maintain one platoon in reserve to be committed only with the approval of the squadron commander.

Armored Cavalry Troop and Platoon. An armored cavalry troop and platoon normally participate in an area security mission as part of their parent unit. Their efforts must be coordinated with those of other combat elements in the area.

During an area security operation, an armored cavalry troop and platoon reconnoiter, screen, defend, attack, and conduct

chemical agent detection and radiological monitoring and survey as required.

AIR CAVALRY

During security operations, air cavalry reconnoiters, screens, and acts as a rapid reaction force. An air cavalry unit may also be part of the reserve, and an air cavalry troop may be an advance guard when the situation is fluid. Air cavalry units should not be

assigned other guard or cover missions. They do not have the closing and staying power required. Actions on contact, target handoff, target engagement, and reconnaissance are discussed in chapter 5.

SCREENING OPERATIONS BY AIR CAVALRY

For general information concerning screening operations by cavalry, see page 6-11.

Air Cavalry Squadron. Actions of an air cavalry squadron screening for a stationary or moving force parallel those of an armored cavalry squadron. However an air cavalry squadron may task organize for screening by:

- Assigning each air cavalry troop a sector/zone and providing each a platoon from the ground cavalry troop. This has the advantage of providing both ground and aerial assets in each zone.

It is desirable when:

- Terrain provides enemy considerable cover and concealment.
- Operation extends over a considerable period.

The primary disadvantages are that it:

- Complicates service support.
- Reduces the squadron's capability to rapidly leave an area.
- Assigning each air cavalry troop and the ground cavalry troop a sector/zone. This technique uses all four troop headquarters for command and control, but provides ground cavalry in only one zone. This may be desirable in desert or great plains areas, or when high-speed armor approaches and cover and concealment are primarily in one zone.
- Employing only air cavalry troops to screen. This technique is desirable in desert or great plains areas, or when the situation is extremely fluid or the operation will be short.

Air Cavalry Troop. An air cavalry troop usually participates in a screening mission as part of its parent squadron. Upon receiving a screening mission, the troop commander makes a map study to determine the general location of the OP's and areas which must be patrolled. He then decides his task organization. An air cavalry troop screens with OP's and aerial teams. Normally, not all aerial assets of the troop are airborne at one time. Usually, width of the sector and nap-of-the-earth requirements result in the platoon commanders controlling OP's and aerial teams. The reconnaissance platoon commander is responsible for establishing and extracting OP's. Once an OP is established, it usually becomes subordinate to the troop commander or the platoon responsible for the sector. OP's are discussed in appendix F. Areas that can't be observed from an OP are patrolled. This may be accomplished by a combination of aerial and ground patrols. Usually, the width of a sector assigned an air cavalry troop requires primary emphasis on aerial patrols. Ground cavalry with an air cavalry troop screening for a stationary force may be assigned a sector, or used behind a screen line astride a high-speed armor approach to ambush. If it is assigned a sector, page 6-17 and following pages apply. If it is used to ambush, it occupies battle positions on order of the troop commander.

When screening for a stationary force, the troop preferably deploys to the initial screen line by conducting a zone reconnaissance. If time does not allow zone reconnaissance, the troop moves as it does during a movement to area reconnaissance forward of friendly lines. On reaching the general area, aeroscout and/or aeroweapons teams hastily reconnoiter general areas for locations. OP's are then established. The teams hastily reconnoiter their areas. The teams may be composed of two aeroscout aircraft or an aeroscout and aeroweapons aircraft. As in all tactical cavalry operations, teams must be at least two aircraft. During screening

operations, aeroweapons aircraft are usually retained as a reaction force.

An OP or patrol detecting an enemy element quickly reports. The reporting element then uses indirect fires, if available, to destroy or repel the enemy. If the troop is screening beyond the range of indirect fire support, aeroweapons are committed as required for target destruction (chapter 5). Primary considerations are:

- The location of an OP or patrol must not be compromised.
- It is usually best to avoid close combat by destroying targets at maximum possible ranges. On the other hand, when first contact is made with an enemy reconnaissance patrol, it may be desirable to withhold fire to observe the patrol's activity and to detect what it is followed by.
- A troop (and consequently a platoon) must obtain permission to permit an enemy element to pass behind the screen line. At times, a squadron may direct a troop to permit an enemy reconnaissance element to penetrate the screen line in order to let the situation develop without alerting the enemy. This element becomes the squadron's responsibility and may subsequently be destroyed by aeroweapons or ground cavalry elements.

- A troop commander must ensure the situation is accurately reported as it develops. He must obtain permission from squadron (or other controlling headquarters) before withdrawing from a screen line. All available fire support is used to harass and impede the enemy. When a troop receives permission to withdraw from a screen line, OP's are quickly extracted. On order, OP personnel quickly move to a predetermined location for extraction and movement to a successive screen line. OP's are extracted under a scout overwatch. The mobility differential of air cavalry often permits teams to keep an enemy under surveillance while other elements are establishing a successive screen line.

An air cavalry troop screening forward of a moving force uses the techniques of zone reconnaissance (page 5-47). The difference is that the troop can't provide detailed information common to zone reconnaissance. When contact is made with enemy reconnaissance elements, the troop conducts the operation as it does when screening a stationary force. It

must also be prepared to help orient follow-on maneuver elements (appendix D).

An air cavalry troop screening to a flank of a moving force conducts the operation in the same general manner as an armored cavalry troop (page 6-17). The difference is that an air cavalry troop, in the absence of enemy contact, normally reconnoiters a greater distance forward of the screen line than does an armored cavalry troop. This is possible because of the mobility differential.

An air cavalry troop screening to the rear of a moving force uses the same techniques as when screening for a stationary force. The difference is that it may be necessary to occupy successive lines because of the movement of the main body, rather than because of enemy action.

Aeroscouts are employed to the front and on the flanks of the unit when moving. Teams maneuver using traveling, traveling overwatch, or bounding overwatch techniques depending on the likelihood of contact. The teams do not move in formation, but they may move as a section or by bounds within the section.

AIR CAVALRY TROOP AND PLATOON AS ADVANCE GUARD

An air cavalry troop or a task-organized air cavalry platoon may be an advance guard for a moving force. In this case, they operate generally the same as during a route recon-

naissance (page 5-45). The difference is that primary emphasis is placed on early development of the enemy situation in the area of the main body's route or axis of advance.

AIR CAVALRY AS RAPID REACTION FORCE

★ The flexibility and mobility differential of an air cavalry unit permits its mission to be rapidly changed. Similarly, an air cavalry unit's aircraft can quickly displace. These factors, coupled with long range, standoff, organic, direct and indirect fires, and the

ability to use available suppressive artillery fires, result in air cavalry frequently operating as a rapid reaction force for ground cavalry conducting security operations on the armor battlefield.

In this role, air cavalry, with all available suppressive fires, can wear down enemy breakthrough elements, or temporarily reinforce a ground maneuver unit by fire. This is done until the situation stabilizes or other ground maneuver units can react. Similarly, reconnaissance platoons may temporarily

provide infantry support to a ground maneuver unit in close terrain. An air cavalry unit, when committed as a rapid reaction force, uses aeroscouts to reconnoiter as required to locate the enemy and firing positions to his flanks or rear. Emphasis is placed on not engaging the enemy head on.

TANK COMPANY OF THE REGIMENTAL ARMORED CAVALRY SQUADRON

During security operations, the tank company is used generally the same way as during reconnaissance operations (chapter 5). It is normally retained under squadron as a reserve unless additional tanks and mechanized infantry are provided. It may be reinforced or cross-attached with mechanized infantry. It is usually used in hasty attacks to keep armored cavalry troops from losing their ability to maneuver, help develop the situation, and destroy the enemy forces. During covering force operations, or when the regiment or squadron must make a deliberate attack, additional tanks and mechanized

infantry may be attached to the squadron and retained in reserve. The tank company may cross-attach platoons with one or more armored cavalry troops, and may be assigned a zone or sector. During screening operations, the tank company is located to the rear of the screen line, either centrally or astride the major high-speed armor avenue of approach. The company attacks, blocks, or ambushes. In desert or great plains areas, it may be desirable to attach a tank platoon to a troop. In this case, the tank platoon is employed behind the screen line for the same purposes as the tank company.

HOWITZER BATTERY OF THE REGIMENTAL ARMORED CAVALRY SQUADRON

During security operations, the battery is used generally the same as during reconnaissance operations (page 5-5). During security operations, it may have to be used in two platoons more often than during other operations. This is especially true when the squadron is screening. During covering force operations, a regiment normally receives additional artillery. This artillery may vary

from a battalion to an artillery group, and is usually attached. Similarly, a regimental squadron acting as a covering force usually has additional artillery. During covering force operations, fires of howitzer batteries organic to squadrons may be controlled by the senior field artillery commander with the covering force.

- Howitzer batteries position and displace as necessary to provide fires as far forward of units in contact as possible without interfering with the movement of maneuver elements.
- Artillery ammunition may be prepositioned in depth during a deliberate defense. This reduces resupply problems. Similarly, pre-positioning of ammunition at the initial firing position for supporting a deliberate attack conserves the basic load for use later on.
- Additional transportation for artillery ammunition is often required during security operations for a moving force.

FM 6-20 contains fire planning, tactics, and techniques of artillery. FM 6-50 discusses firing battery operations.

NIGHT OPERATIONS

OFFENSE

With improved second generation passive devices, night movement, engagement techniques, and objectives, night offensive operations differ little from daylight operations. Frontages and depths for night offensive operations parallel day distances and remain dependent on the factors of METT. Securing deep objectives, turning to attack the rear or flanks of the enemy, and attacking rear support areas are valid missions for night operations when passive devices are used.

Daylight attacks by mounted fires can and should be continued into the night to maintain momentum. Although the ability to overcome enemy strength is greater at night than in daylight, enemy weaknesses should be attacked. These attacks should succeed with fewer losses than daylight attacks due to the limitations of Threat equipment. The Threat has difficulty conducting pinpoint surveillance, detecting targets, accurately aiming weapons, identifying the attacker's main thrusts, and reinforcing in the right place at the right time. Threat forces can't concentrate at night as well as US forces can, so some of the Threat advan-

tage of superior numbers can be nullified. US Army forces should attack more often at night in future wars than they have in the past. Artificial illumination (ir and white light) creates shortcomings that markedly decrease the effectiveness of night operations. For example, artificial pinpoint illumination (white or ir searchlight) illuminates a particular object or area, but the active source can be easily detected and engaged. Flares from aircraft, artillery, or mortars provide tremendous candle power for the artificial illumination of large areas, but they do not discriminate between friend and foe. Winds may move flares so that attackers are visible while defenders remain in shadow.

With second generation passive devices, cavalry can see about as well at night as when using active artificial illumination which is often uncontrollable. Therefore, use of active illumination in future offensive operations should be considered only when low ambient light levels highly restrict the effectiveness of second generation night observation devices (NOD's), or when combat units do not have second generation image intensification (II) capabilities.

DEFENSE

For units equipped with second generation II equipment, night defensive operations differ little from daylight operations. Defenders remain mobile, concentrating forces to achieve an advantage over the enemy engaging from covered and concealed positions, capitalizing on all the advantages of the terrain and the defender's equipment to destroy the enemy as he presses the fight. Night engagement distances for direct fire weapons are determined by the effective range of passive night sights.

Forces are task organized at night as they are during the day. Covering forces are provided with sufficient tank and antitank elements to force advancing Threat units to maneuver, deploy, and concentrate for a main effort. As in the day, main battle area forces are initially mechanized infantry heavy with tanks reinforcing after release from the covering force. Reserves are small.

Passive NOD's add a new dimension to defensive techniques used at night. They allow both protracted engagement times and obscured movements. This is due to the difference between the current NOD capabilities of friendly and Threat forces. Even when the Threat can use his ir or passive engagement capability to maximum effectiveness, his night engagement ranges remain 400 to 800m less than current US II night engagement capability. This means that Threat units can be engaged and forced to deploy beyond *their* effective engagement ranges.

This gives US forces more time to engage the enemy. For example, during daylight engagements each tank or AT weapon may fire only two or three rounds and then move. At night, Threat forces can absorb two or three rounds from each weapon before coming within his identification/engagement range. It is to the defender's advantage to continue the engagement until just before the Threat force has closed to his identification/engagement range, and then move before the enemy can return effective fire.

Passive night vision devices are a means to neutralize or defeat a numerically superior force at night with minimum loss. And so, the use of active illumination in night defensive operations should be considered only when a night passive capability is unavailable or the level of ambient light is insufficient to use passive devices.

White light illumination is not as advantageous to the defender as passive sights because white light:

- Eliminates surprise by alerting the enemy of an impending engagement.
- Tends to identify the locations of defending units, thereby making them vulnerable to return fires.
- Allows the enemy to use his night sights without resorting to his own sources, thus negating the possibility of Threat self-illumination.

SECURITY OPERATIONS AT NIGHT

With passive night vision devices, cavalry conducts security operations using the same tactics and techniques it uses during the day. Increased use may be made of ground surveillance radar, particularly during secu-

rity operations, by a stationary force. More reliance is placed on ground cavalry when visibility is reduced by bad weather and air cavalry can't fly.

COMMAND CONTROL CONSIDERATIONS

Techniques of command control used during reconnaissance operations generally apply to security operations.

DIFFERENCES

Differences During Screening Operations. Significant differences between techniques of command control used during screening operations and those used during reconnaissance are:

- Screening operations are not time phased, but zone reconnaissance operations may be.
- Objectives are not used to control screening operations.
- Phase lines are used to designate the initial screen line and successive screen lines.
- Commander assigning the mission usually designates the initial screen line and may designate successive screen lines.
- A regiment screening for a stationary force designates successive screen lines, and assigns boundaries

and coordination points between squadrons. Coordination points are located at the intersection of squadron boundaries with a screen line.

- An air or armored cavalry squadron screening for a stationary force assigns troop sectors and designates check points, successive screen lines, and coordinating points between troops. (A squadron operating as part of a regimental screen does not designate successive screen lines.)
- An air or armored cavalry squadron screening for a moving force uses graphic control measures common to zone reconnaissance (page 5-22).
- An air or armored cavalry troop commander designates:
 - Boundaries and coordinating points between platoons.
 - Contact points slightly forward of and between OP's in areas which must be patrolled. Contact points are not designated between OP's with overlapping fields of observation.

Differences During Covering Force and Guard Operations. Significant differences between techniques of command and control used during covering force and guard operations and those during reconnaissance are:

- A cavalry unit assigned an advance covering force or guard mission for a force deployed or deploying for defense, a flank or rear covering force, or guard mission for a stationary or moving force is assigned a battle area. During a guard operation, the rear of this area is at least 3,000m from the main body with the forward edge within range of the main body's artillery. During covering force operations, the rear of a cavalry battle area is within range of the artillery with the main body, whereas, the forward edge may be 50-60km away. Battle positions are assigned troops or platoons to orient their firepower in one or more directions. The higher commander specifies which battle position (numbered for reference) is to be occupied, what the unit is to do there, and priorities for reconnoitering and preparing other battle positions. A commander may say: FIRST PLATOON, INITIALLY OCCUPY BATTLE POSITION TWO, PREPARE FIVE, RECON SIX. This provides the necessary reaction to enemy movements.
- A troop or platoon must be prepared to rapidly move and occupy any of several designated battle positions on order. A unit occupies and moves from a battle position only on order or with permission of the next higher commander.

- An armored cavalry squadron as a covering force uses the same techniques as a regiment.

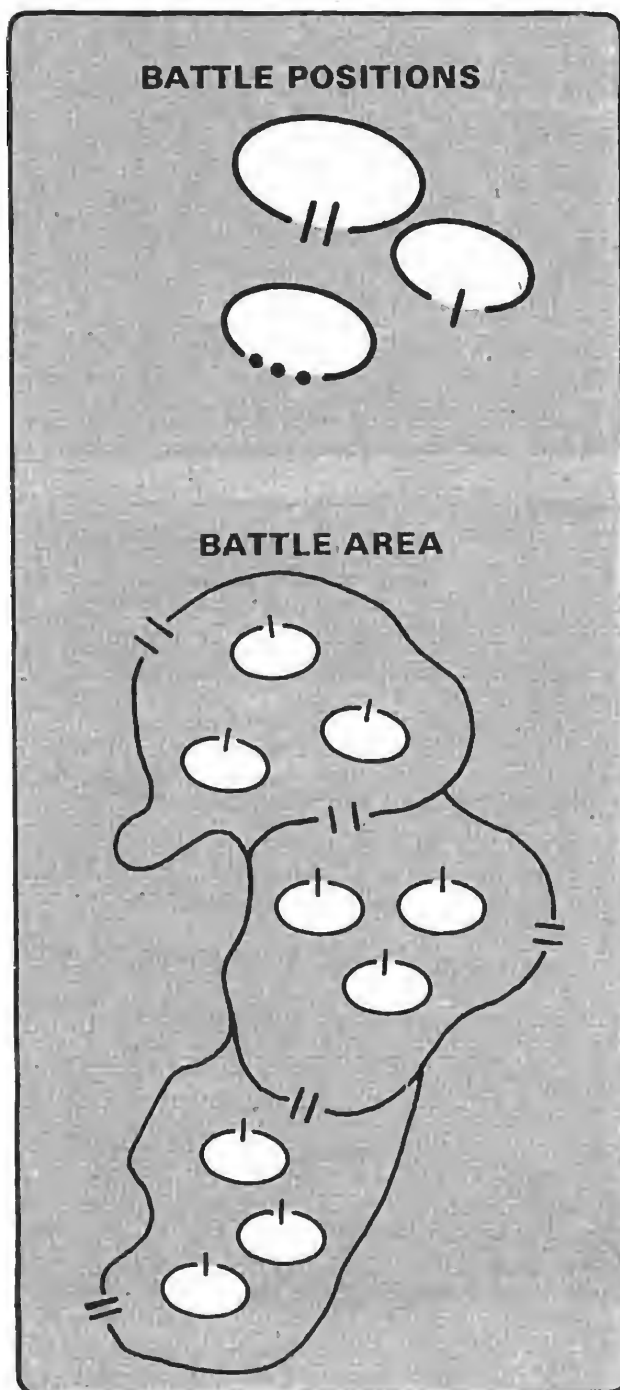
The discussion above applicable to an armored cavalry squadron, troop, and platoon also applies during:

- Advance guard operations for a stationary force.
- Flank and rear guard operations for a moving or stationary force. Most of a flank covering force or guard advances generally along an axis or route of advance inside the blocking position or forward edge of its battle area. This axis or route may be specified by the commander assigning the mission.

Use of Wire and Messengers for Communication. During most security operations conducted by cavalry, there are periods when a unit is not moving. Use of wire lines and messengers, when possible is particularly important in an EW environment. It helps prevent interception and probable suppressive fire by the enemy.

★ ***Tactical Command Relationship's of Armor Aviation Units.*** In combat, the most appropriate command relationship for other than organic air cavalry or attack helicopter units is that of *operational control* to a division, regiment, or brigade. These units may be further attached or assigned away from their parent unit; however, this creates a tremendous logistical burden on the gaining unit and takes away the flexibility inherent with the mobility of these units to rapidly shift anywhere in the CFA or MBA's.

CONTROL MEASURES FREQUENTLY USED DURING THE DEFENSE



★ The cavalry commander uses graphic control and oral instructions to indicate how the defense is to be conducted. Air cavalry and attack helicopter units orient and plan their operations utilizing the same offensive or defensive tactical control measures as those of ground maneuver units.

Battle positions are locations selected as a result of terrain and weapons analysis where units can defend, block, or attack. They can be selected for occupation by units as large as squadrons and as small as platoons. The defending commander directs the fight by specifying which battle position his units will occupy and what they will do there (defend, support, attack by fire, block). Normally, the squadron commander selects the troop battle positions and the troop commander selects platoon battle positions.

A battle area is an area for which a unit has responsibility. Within its boundaries, the unit has complete freedom to fire and maneuver. Outside the boundaries of its battle area, a unit:

- Does not fire artillery, call air strikes, or use scatterable mines without first coordinating with adjacent units.
- Uses its direct-fire weapons against clearly identifiable enemy targets.
- Is ready to move or attack into the battle area of another unit on orders from the next higher commander.

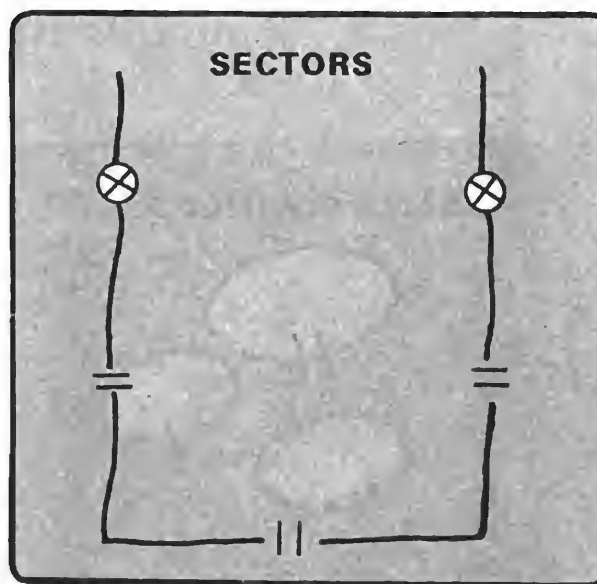
Normally, battle areas are used for battalion task forces and encompass company- and platoon-size battle positions. Battle areas are used to control fire and maneuver, particularly in areas where friendly forces are concentrated to defend against massed enemy attacks.

Sectors delineate unit responsibilities in areas where there is not a high concentration of forces.

Coordinating points are designated at the junction of CFA and MBA boundaries. Leaders coordinate fires and maneuver at coordinating points and along boundaries.

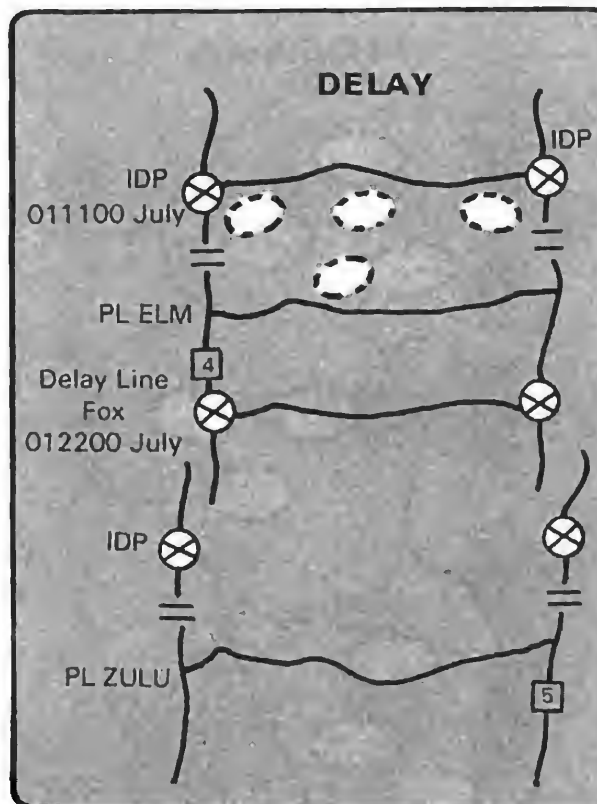
Boundaries mark sectors of responsibility. With coordination, units may fire and move across boundaries. *Commanders must not allow boundaries to restrict their fires on the enemy.*

The rear boundary coordinates fire support logistics support and reserves.



The commander may specify to the delay force a required degree of resistance by time phasing the operation. The delay sector is indicated by boundaries. An initial delay position (IDP) and subsequent positions are specified. Phase lines may be used to report the progress of the battle. The enemy is held forward of delay lines until the specified time or until permission is granted to withdraw.

If time is not the critical factor, more flexibility is afforded subordinate commanders. The sector is still indicated by boundaries, and phase lines may be used. Time-phased delay lines, however, are not designated. Subordinate commanders try to inflict maximum attrition on the enemy without becoming decisively engaged.



CONTROL MEASURES NORMALLY USED DURING A DELIBERATE ATTACK

The need for quick action prevents the assignment of extensive control measures. Usually only an objective and an axis of advance are designated. These are provided by radio by reference to known points or locations.

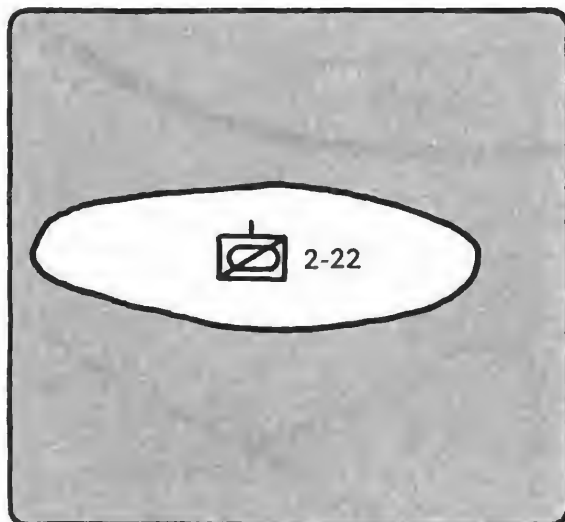
For example: Objective—HILL 505, HIGH GROUND ON FAR BANK

OF BLACK RIVER, CENTER OF MASS NB 169347.

Axis of Advance—ROUTE BLUE, HIGHWAY 19, HILLS 303, 460, and 505.

Instructions are encoded or given over secure radio. They should never be given in the clear.

CONTROL MEASURES FREQUENTLY USED DURING A HASTY ATTACK



Assembly Area. An assembly area is an area in which a unit is assembled to rest and prepare for operations.

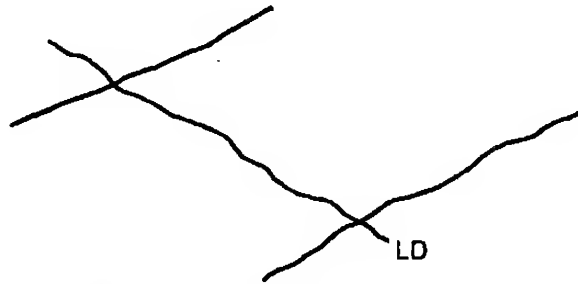
Normally, the following activities are accomplished in assembly areas as a prelude to a deliberate attack:

- Issuance of orders.
- Organization for combat.
- Maintenance.
- Supply.

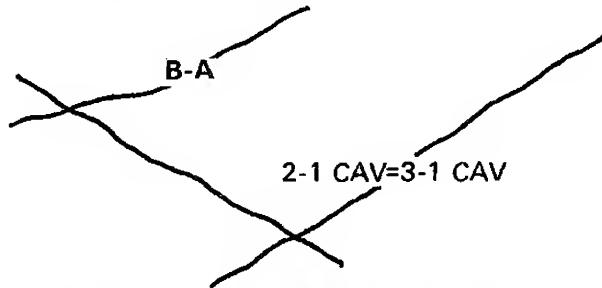


Attack Position. An attack position is an area where units leading the attack deploy. Preferably units do not halt in an attack position. A unit should never remain in an attack position longer than 3-5 minutes.

Line of Departure (LD). An LD is used to coordinate the commitment of units to the attack at a specified time and place. Ideally, it is an easily identifiable terrain feature held by friendly forces.



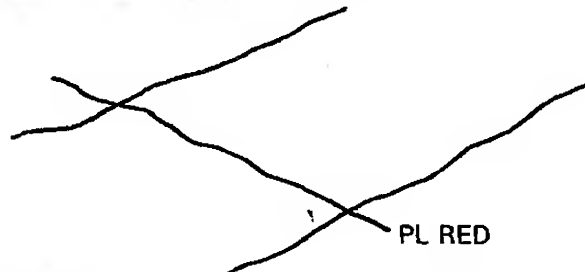
Boundaries. Boundaries are used to designate areas of responsibility. They can be used to coordinate movement and fires down to troop level. However, commanders must not allow boundaries to restrict concentration of fires on the enemy.



Axis of Advance. An axis of advance indicates the general direction of movement of an attacking unit.



Phase Line (PL). A PL helps control the progress of units and serves as a point of reference.



Checkpoints. Checkpoints provide a means of rapidly reporting specific locations and information pertaining to units. *They should not be used to report enemy locations.*



Assault Position. An assault position is the position from which dismounted infantry assault an objective. Ideally, it is the last covered and concealed position before reaching the objective.

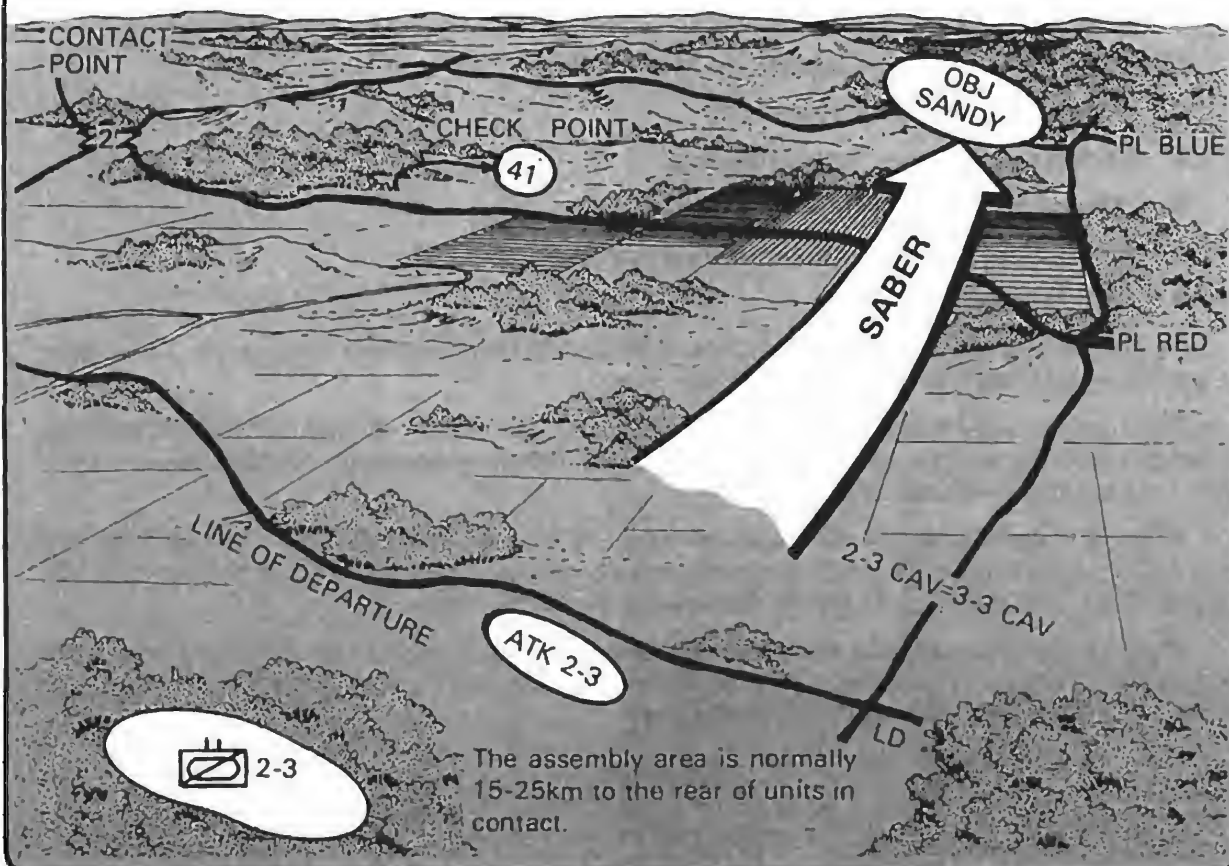


Contact Points. A contact point is a point on the ground where two or more units are required to make physical contact. Their location should be easily identifiable.



Objective. An objective may be a terrain feature, place, or enemy force. Assignment of an objective normally requires the unit to secure and control it until further orders are received.

RELATIONSHIP OF CONTROL MEASURES IN A DELIBERATE ATTACK



SUMMARY

Security operations provide reaction time, maneuver space, and information about the enemy to the main body. These operations include:

- *Screening Operations.* Screening cavalry units maintain surveillance and early warning by maintaining contact with enemy forces. A screening force impedes and harasses the enemy, and destroys or repels enemy patrols.
- *Guard Operations.* Guarding cavalry prevents enemy ground observation, direct fire, and surprise attack.
- *Covering Operations.* Covering cavalry operates apart from the main body to intercept, engage, deceive, disorganize, and destroy enemy forces before they can attack or halt the main body.

The five fundamentals of security operations are:

- Orient on the friendly main body.
- Perform continuous reconnaissance.
- Provide early and accurate warning.
- Provide reaction time and maneuver space.
- Maintain enemy contact.

Cavalry conducting security operations will usually find an enemy force moving to contact or providing security for a larger defending force.

The purpose of *offensive operations* is to defeat the enemy or destroy his will to resist. Attacking cavalry seeks a weakness in the enemy defense, concentrates overwhelming combat power against it, and attacks.

When cavalry conducts a *defensive operation*, it is an ACTIVE defense. An active defense wears down the attacker by confronting him with combined arms teams fighting from mutually supporting battle positions in depth throughout the battle area.

The purpose of *delay operations* is to force the enemy to take the time to concentrate, again and again, against successive battle positions. Delay is one of the most demanding and common actions a cavalry unit will undertake.

MOVEMENT ORDER

A movement order is a type of operation order. It contains instructions for the movement of units from one location to another within a stated time. Preparation of the order normally follows reconnaissance and an estimate of the situation.

Information in the movement order includes the situation of friendly and enemy forces, destination, routes, rate of march, maximum speeds, order of march, start point, start point times, details of air and ground alert guards, scheduled halts, vehicle distances, time gaps, release point, critical points, service support, communications, location of the commander during the march, and strip maps. Other details may include route or unit markers to be used, control or

check points, and locations of road guides. Some items listed above often become standard, and units include them as standing operating procedure. Repetition of these items is not necessary in the order.

A *strip map* is a sketch of the route of march and is normally included as an annex to the movement order. Enough strip maps should be reproduced to supply them to key personnel, including vehicle commanders and route guides. The amount of detail depends upon the purpose of the strip map and the unit level at which it is prepared. A strip map should contain the start point, release point, restrictions, and critical points with the distance between them. The following is a strip map.

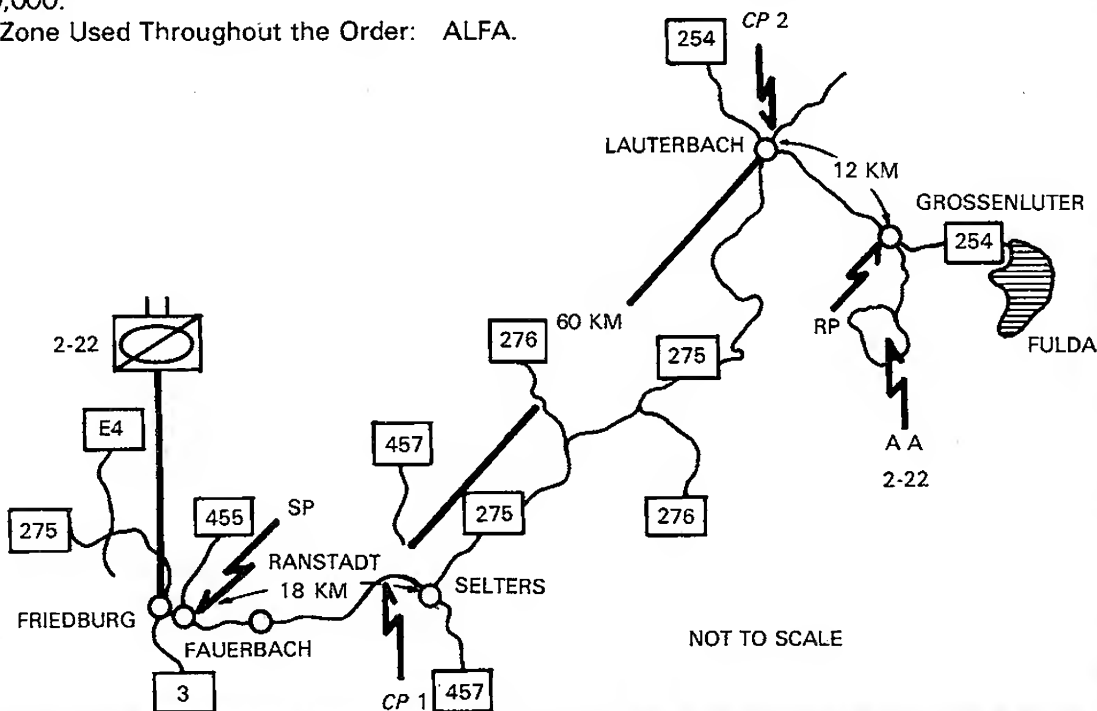
STRIP MAP

(CLASSIFICATION)

ANNEX A (STRIP MAP) to OPORD 10-2-22 Cavalry.

Reference: Map, series M501, sheet NM32-5 (FRANKFURT AM MAIN), edition 2-AMS, 1:250,000.

Time Zone Used Throughout the Order: ALFA.

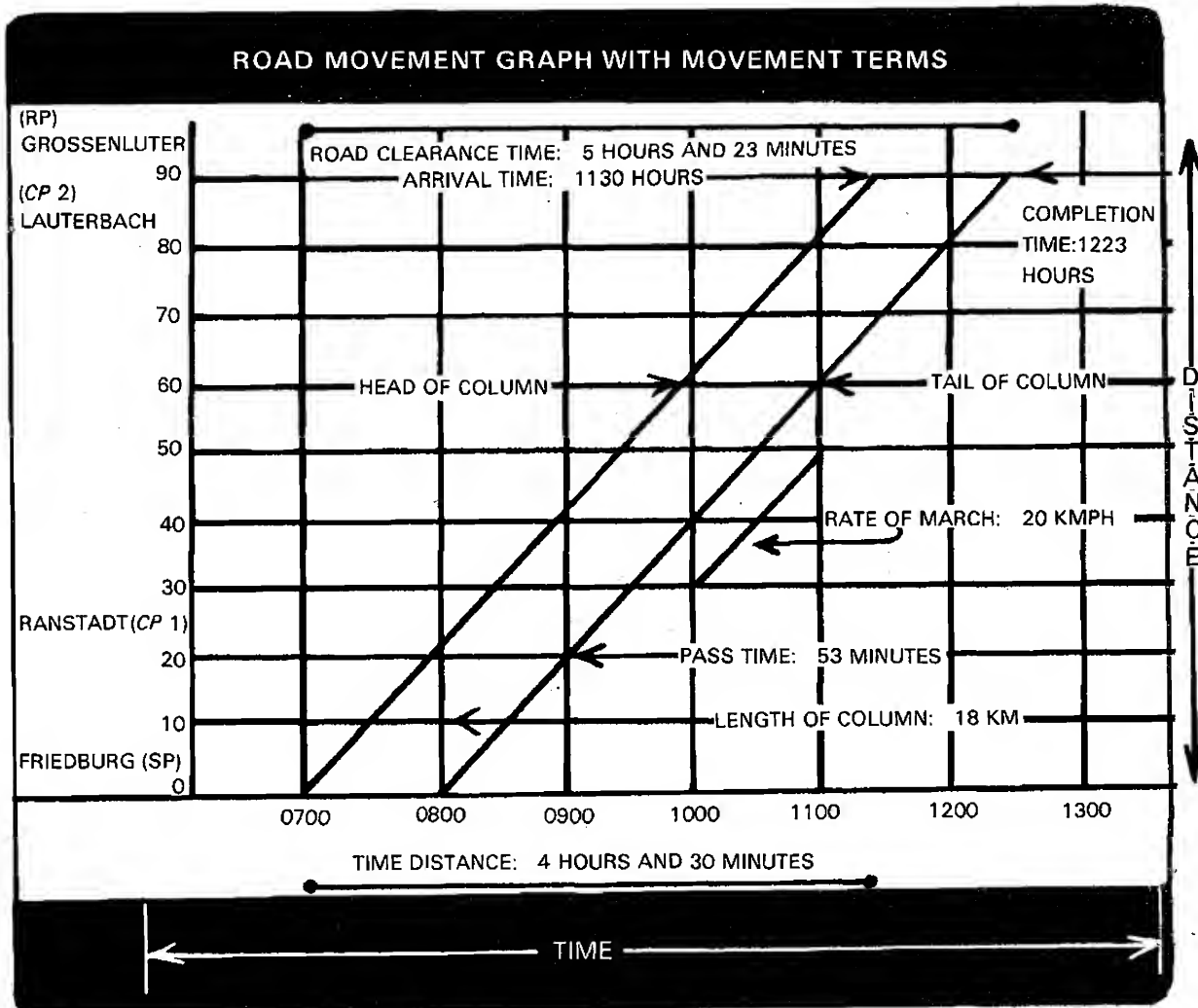


ROAD MOVEMENT GRAPH

A road movement graph is a time space diagram that depicts a movement from start point (SP) to release point (RP). It may be used during the movement's planning stage to avoid conflicts and discrepancies and prevent congestion along the route of march. It may also be used to prepare and check the road movement table. It shows the relative time and location of the head and tail of each march element at any point along the route, arrival and clearance times of march elements at critical points and restrictions, pass times, time distance, and rate of march. Preparation of a road movement graph is not

mandatory, but it is of great value to the planner simply because it reduces mathematical calculations that would ordinarily be required to prepare march schedules.

Information derived from march formulas or obtained from march tables is transferred directly to the graph. To complete the road movement graph, the planner must have already organized the march column into serials or serials into march units, and determined time distance, arrival time, completion time, and pass times for each serial or march unit as appropriate.



ROAD MOVEMENT TABLE

A road movement table is normally an annex to a movement order. It is a convenient means of transmitting time schedules and other essential details of the move to subordinate units. It is particularly useful when the inclusion of such details in the body of the operation order would tend to make the order complicated or unduly long. Road movement tables consist of two parts: data paragraphs reflecting general information common to two or more march elements, and a list of serials or march units with all other necessary information arranged in tabular form.

Data from the road movement graph is

transferred to the road movement table. The times serials or march units arrive at and clear critical points are particularly important to the march planner.

Other information included on the road movement table are serial or march unit number, date of move, units involved, number of vehicles, load, class of heaviest vehicle, routes to be used, and a remarks section to reflect any details not covered elsewhere. The following is an example of a road movement table scheduling the movement of a battalion-size unit.

ROAD MOVEMENT TABLE NOTES

1. Only the minimum number of headings should be used. Any information common to two or more movement numbers should be included under General Data paragraphs. [Columns (f), (g), (h), (i), and (m) could have been omitted in this example.]
2. Since the table may be issued to personnel concerned with control of traffic, the security aspect must be remembered. It may not be desirable to include dates or locations.
3. If the table is issued by itself, and not as an annex to a more detailed order, the table must be signed or authenticated in the normal way.
4. Critical point is defined as a selected point along a route used for reference in giving instructions. It includes start points, release points, and other points along a route where interference with movement may occur or where timings are critical.
5. The movement number [column (a)] identifies a column (or element of a column) during the whole of the movement.
6. If an annex has the same distribution as an operation, it is not necessary to include the headings shown in this example.
7. To obtain due times for an MU, transfer times directly from road movement graph or calculate using time distance table and strip map.
8. To obtain clear times, add MU pass time to due time.
9. To complete the schedule for successive march units, add pass time plus time gap to due time.

Example. PST of MU1 is 9 minutes and time gap between MU1 and MU2 is 2 minutes = 11 minutes. Add the 8 minutes to the 0700 SP due time of MU1 to obtain the SP due time for MU2 which is 0711.

ROAD MOVEMENT TABLE

(CLASSIFICATION)

ANNEX B (ROAD MOVEMENT TABLE) to OPORD 10-2-22 Cavalry.

Reference: Map, series M501, sheet NM32-5 (FRANKFORT AM MAIN), edition 2-AMS, 1:250,000.

Time Zone Used Throughout the Order: ALFA.

General Data:

1. Speed: 24 kmph.
2. Rate of March: 20 kmh.
3. Open Column.
4. Traffic Density: 15 VPK.
5. Time Gaps: 2 minutes between march units.
6. Halts: SOP.
7. Route: Annex A, Strip Map.
8. From: FRIEDBURG MA812610.
9. To: KLEINLUDER NB385005.

10. Critical Points:

- a. Start Point: RJ 275 at MA839754 (FAUERBACH).
- b. Release Point: RJ 254 at NB383038 (GROSSENLUDE).
- c. Other Critical Points:
 - (1) RJ 457 and 275 at MA989780 (RANSTADT).
 - (2) RJ 275 and 254 at NB278102 (LAUTERBACH).
- d. Route Classification: 6 m x 60.
11. Main Routes to SP: Hy 3 to Hy 275.
12. Main Routes from RP: Unnumbered secondary route.

March Unit No.	Date	Unit	No. of Veh's	Load Class Hv Veh's	From	To	Map	Route to SP	Critical Points			Route from RP	Remarks
									Ref	Due (hr)	Clear (hr)		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
Qtr Party	4 Aug	S1, Sqdn Comm Plt, HHT XO, Trp A, Trp B, Trp C, Trp D	7	12	(8 above)	(9 above)	Strip map	(11 above)				(12 above)	Move by infiltration
MU1	4 Aug	Trp A	40	25	(8 above)	(9 above)	Strip map	(11 above)	SP CP1 CP2 RP	0700 0754 1054 1130	0709 0803 1103 1139	(12 above)	Det: One ¼-ton veh w/qtr pty, 1 sup trk to sqdn tns. Atch: 1 Redeye veh, 1 aid/evac veh. PST: 9 minutes.
MU2	4 Aug	HHT (-) Sqdn HQ Sec, Trp HQ Sqdn Comm Plt, Redeye Sec (-)	23	16	(8 above)	(9 above)	Strip map	(11 above)	SP CP1 CP2 RP	0711 0805 1105 1141	0716 0810 1110 1146	(12 above)	Det: Two ¼-ton veh's and one 1½-ton veh w/qtr pty, 3 Redeye veh's. PST: 5 minutes.
MU3	4 Aug	Trp B	40	25	(8 above)	(9 above)	Strip map	(11 above)	SP CP1 CP2 RP	0718 0812 1112 1148	0727 0821 1121 1157	(12 above)	Det: One ¼-ton veh w/qtr pty, 1 sup trk to sqdn tns. Atch: 1 Redeye veh, 1 aid/evac veh. PST: 9 minutes.
MU4	4 Aug	Trp D (-)	21	16	(8 above)	(9 above)	Strip map	(11 above)	SP CP1 CP2 RP	0729 0823 1123 1159	0734 0828 1128 1204	(12 above)	Det: One ¼-ton veh w/qtr pty. PST: 5 minutes.
MU5	4 Aug	Sqdn Tns, Spt Plt (-) Med Plt (-)	25	16	(8 above)	(9 above)	Strip map	(11 above)	SP CP1 CP2 RP	0736 0830 1130 1206	0742 0836 1136 1212	(12 above)	Det: 1 CI III trk, 3 aid/evac veh's. Atch: 3 trp sup trks. PST: 6 minutes.
MU6	4 Aug	Trp C	40	25	(8 above)	(9 above)	Strip map	(11 above)	SP CP1 CP2 RP	0744 0838 1138 1214	0753 0847 1147 1223	(12 above)	Det: One ¼-ton veh w/qtr pty, 1 sup trk to sqdn tns. Atch: 1 Redeye veh, 1 aid/evac veh. PST: 9 minutes.
Trail Party	4 Aug	Sqdn Maint Plt	8	25	(8 above)	(9 above)	Strip map	(11 above)				(12 above)	Move by infiltration. Atch: 1 CI III trk.

(CLASSIFICATION)

ASSEMBLY AREA

An assembly area is an area in which a unit assembles to prepare for future operations. It is here that orders are issued, and the unit services and repairs vehicles, receives and issues supplies, and feeds soldiers. The assembly area, when used to prepare for an attack, is usually well forward. If possible, it should be out of range of enemy light artillery.

DESIRABLE CHARACTERISTICS

Desirable characteristics for an assembly area are:

- *Concealment from Air and Ground Observation.* Overhead concealment is important if the unit is to remain in the area for any length of time. Vehicles, equipment, entrances, and exits should be camouflaged to keep the enemy from detecting the location of the unit.
- *Cover from Direct Fire.*
- *Good Drainage and a Surface That Supports Vehicles.*
- *Good Exits, Entrances, and Adequate Internal Roads or Trails.*
- *Space for Dispersion of Vehicles, Personnel, and Equipment.*
- *A Suitable Landing Site Nearby for Organic, Attached, or Supporting Helicopters.*

ACTIONS IN AN ASSEMBLY AREA

Before the main body leaves the rear assembly area, the march commander sends a quartering party to the forward assembly area. During this movement, the quartering party provides its own security. A quartering party, on arriving in the forward assembly area:

- *Reconnoiters the area.* If the area is unsatisfactory (poor drainage, no concealment, poor routes, etc.), the quartering party leader contacts his commander and asks for permission to find another area.
- *Organizes the area.* The quartering party leader selects locations for subordinate units, command post, and trains, as appropriate. When selecting locations, the quartering party leader considers each unit's position in the march column. If a subordinate quartering party leader determines from his reconnaissance that his unit's area is unsatisfactory, he immediately notifies the senior quartering party leader and requests a change. If a change can't be made in the time available, the unit is located under the best available cover and concealment as soon as it arrives, and adjustments are made later.
- *Improves and marks entrances, exits, and internal routes* within its capabilities.
- *Marks or removes obstacles and mines.*

- **Marks vehicle locations.** Each platoon quartering party member marks the general area for mutually supporting vehicle positions. The exact positions are selected by vehicle commanders on arrival.
- **Performs guide duties.** Each platoon is guided from its RP into its sector of the assembly area by its quartering party member.

Occupation. Upon arrival of a unit at an assembly area, all elements move off the road and clear the route of march without slowing or halting. Posting of guides, selection of routes, and allocation of areas by the quartering party are done with this objective in mind. The march route must not be blocked while precise adjustments are made. After a march serial has cleared the route, adjustments of vehicles can be made without holding up traffic.

Security. Observation posts cover key terrain features and likely avenues of approach. Although an assembly area is not a defensive position, a unit must be ready to see and defeat enemy attacks. Local security is established as vehicles are positioned. Vehicle commanders and platoon leaders coordinate overlapping observation and fires. Crews prepare range cards. Crews and squads camouflage each vehicle and position to prevent detection from ground and air. Protective mines, when authorized, may be placed to provide close-in protection and warning of enemy approach.

Communications. The primary means of communication is by messenger and by visual signals. Radio is only used in an emergency when no other means of communication can be used. Each troop provides a messenger to the squadron command post. A regiment and/or squadron provides a liaison officer and messenger to the next higher headquarters.

RELIEF IN PLACE AND PASSAGE OF LINES

When combat continues over a prolonged period, or when the enemy situation has been developed, relief of a cavalry unit may be required. This may be done by *relief in place* or *passage of lines*. These operations are difficult and dangerous, since one unit has enemy contact and the other unit is expecting it.

A *relief in place* occurs when all or part of a defending unit is replaced in position by another unit. Only on rare occasions is a cavalry unit relieved in place or required to relieve another unit. A relief in place by or of a cavalry unit should be conducted only when a passage of lines is not tactically feasible.

A *passage of lines* is movement of one unit through another when one is in contact with the enemy. A cavalry unit frequently makes, or helps other units make, a passage of lines during reconnaissance and security operations.

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RELIEF IN PLACE

Congestion and intermingling of units inherent during relief in place operations requires detailed planning and coordination to prevent:

- Confusion.
- Enemy detecting the relief.

Commanders ordering a relief in place must specify time for starting and completing the relief and routes to be used. A relieving unit (incoming unit), regiment through troop, usually establishes a CP element, or leaves liaison personnel in the vicinity of the CP of the unit to be relieved (outgoing unit). This should be done as soon as possible after the warning order is issued. Key personnel of the relieving unit must become thoroughly familiar with existing defense plans, including fire support, barrier, and counterattack plans.

BASIC CONSIDERATIONS

Time. Time for planning, coordination, and reconnaissance is essential.

Plan. A detailed plan coordinated between incoming and outgoing units is necessary to accomplish a relief quickly without being detected. Primary considerations are:

- Relief at night or during periods of reduced visibility.
- Use of smoke to obscure enemy observation.
- Maintaining radio listening silence in the relieving unit while continuing normal radio traffic in the unit being relieved.
- Limiting size and composition of reconnaissance parties.

- Completing relief rapidly to reduce enemy detection and reaction time.
- Use of indirect fires to cover sound of armored vehicle movement.
- Fire support during relief.
- Time or circumstances when command passes from outgoing to incoming commander.

Reconnaissance. Incoming commanders and key personnel, preferably through platoon leaders, reconnoiter routes to be used and familiarize themselves with the terrain and enemy situation. *Usually, this reconnaissance is deferred until after the outgoing and incoming commanders have conferred.* This permits an orderly approach and prevents confusion. Outgoing commander(s) and platoon leaders normally remain in position while subordinates reconnoiter withdrawal routes and subsequent rendezvous points and assembly areas.

Liaison Personnel. An incoming unit usually locates personnel through company/troop/battery level with counterpart elements to be relieved. These personnel keep abreast of the situation and prepare to meet and help guide their unit into position. They also gather pertinent information concerning:

- Peculiarities of the defense position.
- Terrain.
- Enemy activities, including pattern of operations.
- Friendly and enemy patrolling activity.
- Lessons learned unique to the situation at hand.

Exchange of Equipment. Vehicle reference and aiming stakes are left in place and range cards exchanged (FM 17-12). The outgoing unit leaves its pre-positioned ammunition and field fortification materiel.

Minefields. The outgoing unit must inform the incoming unit of all mines in the area.

Movement into the Area. In cavalry, scouts reconnoiter and mark routes. An incoming unit should use routes other than those used by the outgoing unit. This will significantly reduce confusion and simplify planning and coordination. On order, the incoming unit moves forward on assigned route(s) to release points. Each company/troop/battery is met at its release point and guided by its own personnel to a release point for platoons. A platoon is guided from the platoon release point in its battle position by personnel from the unit being relieved.

Rendezvous Points and Assembly Areas. A route of withdrawal and rendezvous point not under enemy observation is designated for each platoon being relieved. An assembly area is designated several kilometers rearward for each troop-size unit being relieved. Teams of an armored cavalry platoon, or sections or squads of other platoon, when relieved, move directly to their platoon rendezvous point. When a platoon has reassembled, it moves on its assigned route to the assembly area.

Intelligence. The incoming unit obtains all possible information of enemy and terrain, including the location of friendly obstacles and minefields from the outgoing unit.

SEQUENCE OF RELIEF

Sequence at Regiment/Squadron Level. A regiment or squadron phases a relief in place to permit as orderly a transition as possible. Reserves may be relieved first, followed by relief of forward elements or vice versa. Artillery with regiment or squadron usually remains in position until relief of maneuver units is complete. This ensures that artillery familiar with local fire support is in position during the relief. For a discussion of relief in place of artillery units, see paragraph b below. The actual sequence is determined by analyzing:

- Enemy situation and capability to detect the relief and react.
- Terrain.
- Time available.
- Degree of concentration of forces acceptable.

Once a sequence of relief is determined, the unit being relieved decides the sequence of relief for forward elements. The sequence may be relief of:

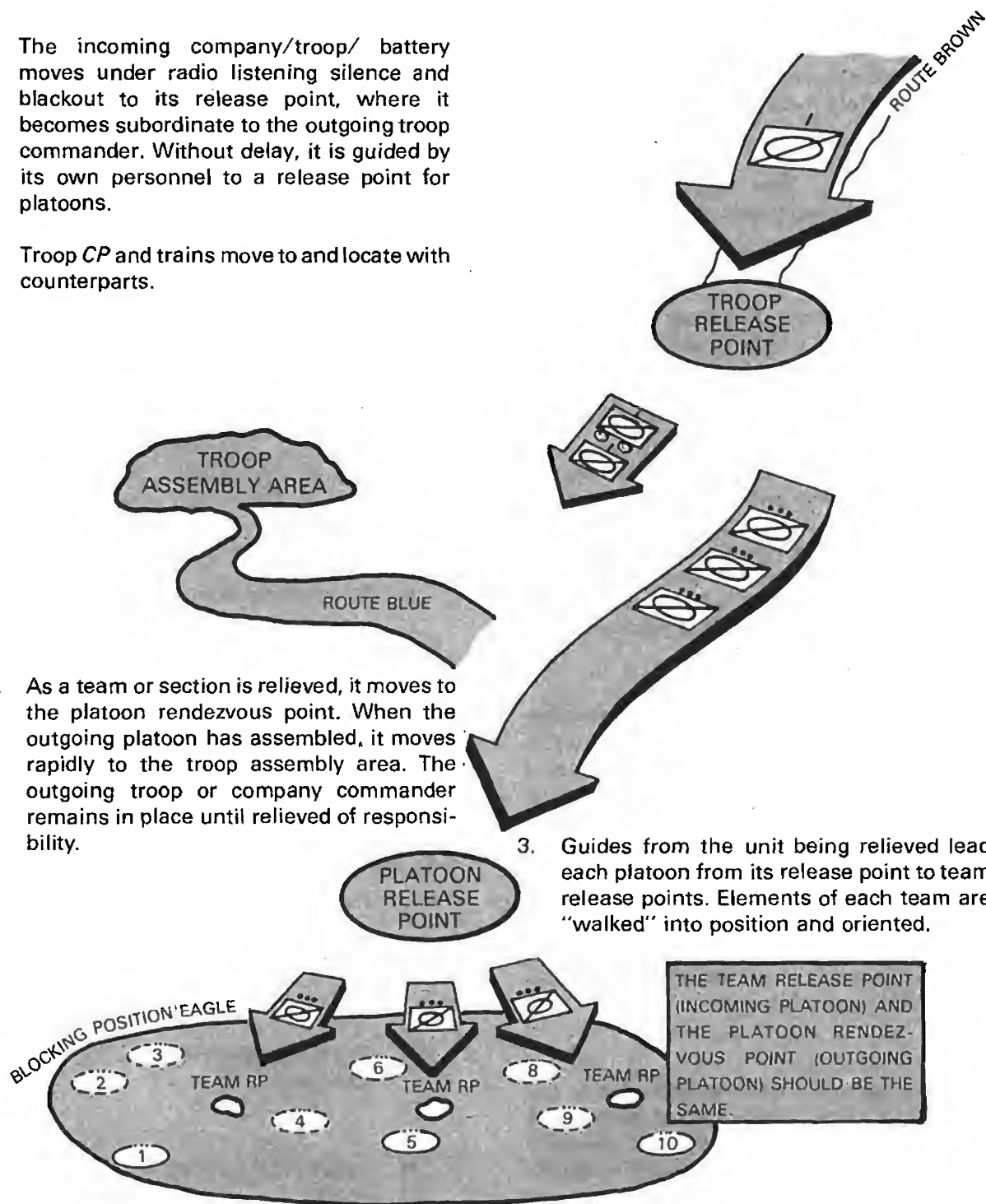
- Flank units followed by relief of center unit(s).
- Center unit(s) followed by relief of flank units.
- Relief of all forward units simultaneously.

Sequence of Relief at Company/ Troop/Battery Level.

1. The incoming company/troop/ battery moves under radio listening silence and blackout to its release point, where it becomes subordinate to the outgoing troop commander. Without delay, it is guided by its own personnel to a release point for platoons.
2. Troop CP and trains move to and locate with counterparts.

4. As a team or section is relieved, it moves to the platoon rendezvous point. When the outgoing platoon has assembled, it moves rapidly to the troop assembly area. The outgoing troop or company commander remains in place until relieved of responsibility.

3. Guides from the unit being relieved lead each platoon from its release point to team release points. Elements of each team are "walked" into position and oriented.



In cavalry, artillery of the unit being relieved usually remains in position until maneuver units have been relieved. In any case, liaison officers and forward observers of relieving artillery locate with artillery to be relieved as soon as possible to become familiar with fire plans. If sufficient area is available, relieving artillery units may occupy new positions. In this case, relieving artillery usually moves into position by battery. If relief requires more than one night, relieving artillery usually moves at least one piece per battery forward the first night to secure registration data. Until command passes, the commander of the artillery being relieved controls registration and all other fires of the relieving artillery. Headquarters ordering a relief may direct artillery with the unit being relieved to remain in position to support the subsequent operations of the relieving unit. In this case, if additional

artillery moves into the area, dispersion is a primary consideration.

Command Control. Execution of a relief in place is controlled by the commander of the outgoing unit. He is responsible for the defense of the area until relieved by higher headquarters. If enemy attacks before relief is completed, elements of the relieving unit in position are controlled by the outgoing commander. Commanders of incoming and outgoing units should be together until relief is completed. Relieving elements must monitor communications frequencies and call signs of their counterparts in the outgoing unit. The relieving elements maintain radio listening silence until in position. Once in position, they break radio listening silence and transmit as required. At this time, elements of the outgoing unit assume and maintain radio listening silence until relief is completed.

PASSAGE OF LINES

A passage of lines may be either *forward* or *rearward*. A forward passage of lines is when a unit moving to contact passes through a unit in contact. A rearward passage is when a unit breaking contact passes through a unit not in contact. A forward passage of lines may be required to attack with more than just the unit in contact. Zone reconnaissance, or an advance covering force operation for a moving force, often evolve into cavalry units helping main body

units make a forward passage of lines. On the other hand, a cavalry unit conducting reconnaissance and security operations, or attacking, frequently makes a forward passage of lines. A cavalry unit returning from area reconnaissance forward of friendly lines, or participating in an advance covering force or guard operation for a force deploying for defense, must make a rearward passage of lines.

CONSIDERATIONS FOR PASSAGE OF LINES

Headquarters directing a passage of lines normally establishes priorities on routes and areas and designates passage and contact points. If it does not, commanders concerned must come to an agreement. Information concerning routes, passage and contact points, and areas should be disseminated as early as possible.

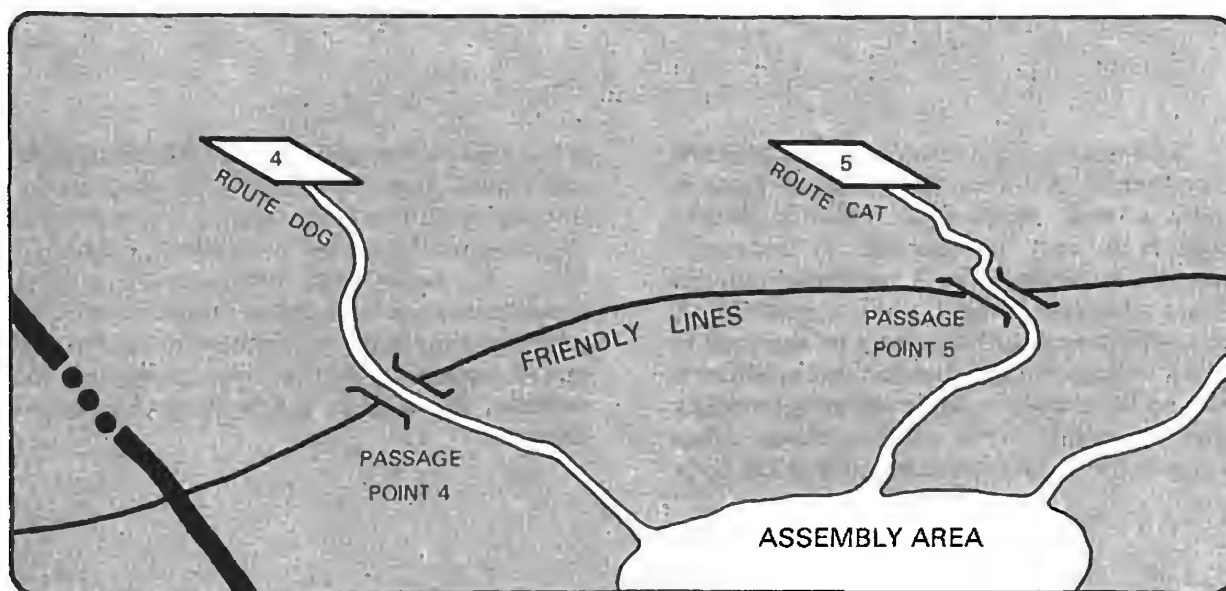
Contact Points. A contact point is designated for each passage point by the commander ordering passage. Additional contact points may be designated by commanders. A contact point must be located in an easily identifiable location beyond range of, or protected from, direct fire of the unit being passed through. The unit being passed through must man each contact point with communications equipment and guides. In cavalry, scouts are used. Initial physical contact with a passing unit takes place at contact points. The passing unit is then guided to and through a passage point.

Passage Points. Passage points are points where a passing unit moves through

another unit. They must be easily recognizable. A passage point also provides a means of reporting locations and information relative to traffic control. At night or during periods of limited visibility, ground surveillance radar may be used to vector units to a contact or passage point. The passing unit must inform the unit passed when it has completed its passage.

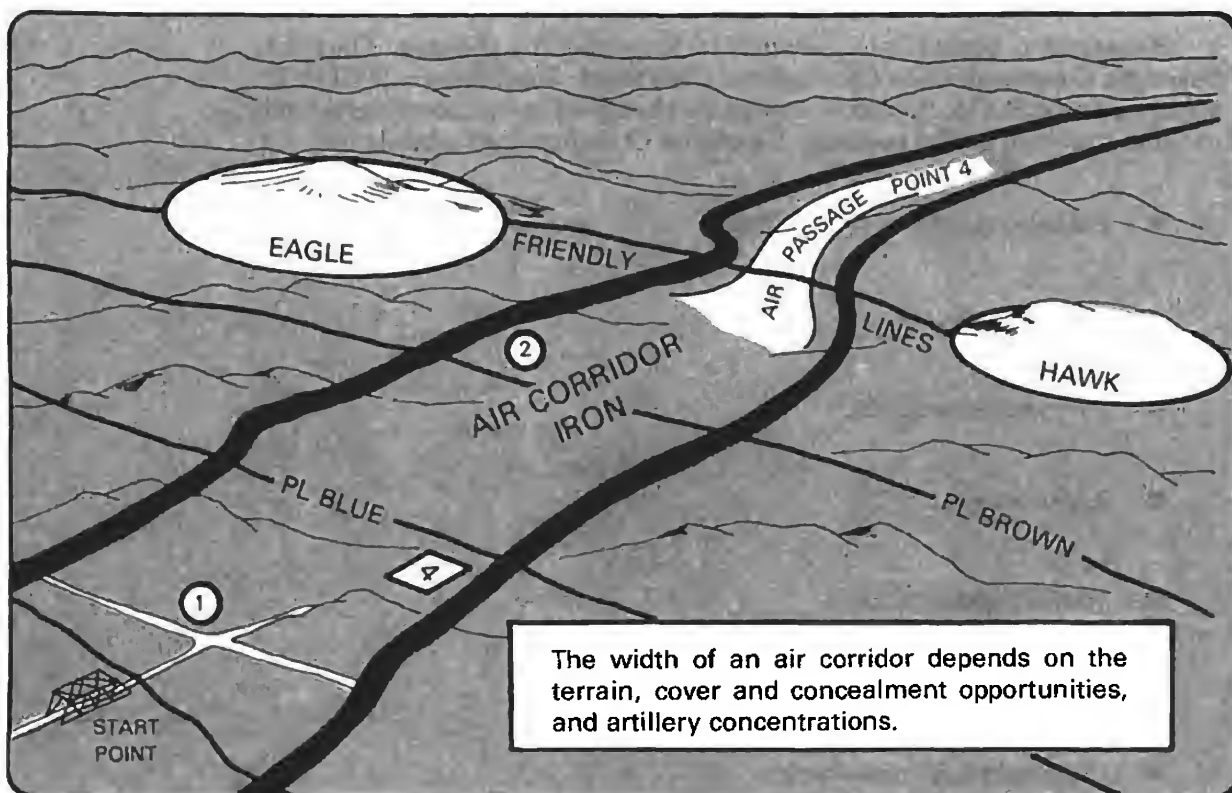
Routes. Routes are designated from contact points through passage points. During a rearward passage, routes to assembly areas are designated.

Traffic Control. The commander of the unit moving to passage point(s) is responsible for traffic control before reaching the contact point(s). The unit manning the passage point(s) assumes this responsibility at contact point(s). At night and in close terrain, it may be desirable for elements to be guided from a contact point through a passage point.



Considerations for Aircraft. Passage of air cavalry and Army aviation units must be controlled as closely as that of ground vehicles. As in all operations, flight of Army aircraft is in accordance with the Theater Airspace Management Plan. Cavalry operations require:

- **Air corridors** for aircraft moving to air passage points. This prevents interference with other aircraft and fires of artillery and air defense artillery. An air corridor terminates at a specific point (landing/laager area, terrain feature, etc.). Different corridors are usually established for aircraft with the unit manning the contact and passage points to avoid confusion.
- **Air passage points and recognition signals** to prevent engagement of friendly aircraft. Normally, recognition signals are given and acknowledged before aircraft pass through an air passage point. Air passage points must be readily identifiable from the air and ground and in or at the end of an air corridor.



SPECIAL CONSIDERATIONS FOR FORWARD PASSAGE OF LINES

- When possible, passage should be through elements not in contact, or in an area lightly held by friendly forces. This technique helps prevent congestion.
- A unit manning contact and passage points must provide information concerning minefields in the area, safe lanes, and, if necessary, guides.
- Artillery supporting units manning passage and contact points usually integrates into the fire support plan of the unit passing through.

RECOGNITION SIGNALS FOR REARWARD PASSAGE OF LINES

Recognition signals are included in the order for passage. They are based on Communications Electronics Operation Instructions (CEOI) in effect and unit SOP's. Recognition signals should be known to all personnel of units involved in the passage. Examples of recognition signals are:

- Flashlights with colored filters.
- Flag signals.
- Pyrotechnic signals.
- Sound signals.
- Radio signals (CEOI).
- Use of colored smoke grenades.
- Challenge and passwords.

MILITARY OPERATIONS IN BUILT-UP AREAS (MOBA)

Many areas of the world, especially Western Europe, have experienced a massive growth in built-up areas and manmade changes to the natural landscape. These changes significantly affect potential future battlefields. Avoidance of built-up areas is no longer possible. Rather, military operations in built-up areas are an integral part of combat operations and present special opportunities and challenges to the squadron commander.

Due to increasing urbanization, the squadron will frequently be required to operate in areas interspersed with many small villages and towns, some larger towns, and even major urban complexes.

There are four different types of built-up areas and each presents special problems and opportunities to tactical commanders:

- *Small villages* (population ~~1,000 or less~~), especially in Europe, are characterized by stone, brick, or concrete stores, houses, and barns in a cluster with a number of more modern and more lightly constructed houses on the outskirts. Villages provide ready-made cover for platoons and troops, and in some cases even for the squadron.
- *Strip areas* are generally interconnecting built-up areas between villages and towns along roads and valleys.
- *Towns and small cities* (population up to 100,000) which are not a part of a major urban complex.
- *Large cities* with associated urban sprawl (population between 100,000 and several million covering 100 or more square miles.)

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Villages, small towns, and strip areas will be a common occurrence to the squadron. The larger towns and small cities will have an impact on the operations of brigades and divisions. Large cities and major urban complexes will affect operations at division or corps level. The squadron can normally expect to operate in larger towns, cities, and major urban complexes only as part of a larger force.

The defender has the advantage in the use of a built-up area. He has protection from direct and indirect fire, as well as concealment and covered routes of movement within the area. The built-up area itself is an obstacle to the attacker and with mines, craters, and rubble, the effect can be multiplied. The attacker can isolate and bypass some built-up areas but will be required to move through others. He is then faced with the prospect of fighting from the outside into a well-defended position. Both attacking and defending forces will take advantage of built-up areas to locate command posts, stocks of supplies, and combat service support units.

Whenever possible, a cavalry unit should bypass defended cities, because urban combat operations are characterized by house-to-house fighting, restricted observation and fields of fire, and restricted maneuver space for ground vehicles. As a result, most combat in such areas consists of infantry actions. On the other hand, a cavalry unit must frequently reconnoiter to determine if a city is defended. (Reconnaissance operations are described in chapter 5.) At times, a cavalry unit may be required to participate in an operation to subdue enemy defending a city. As the (or part of the) envelopment force, cavalry should help seal off the area to prevent enemy reinforcement or escape. An air cavalry unit may be used in this role, but should not be committed to city fighting. If an armored cavalry squadron must fight in a large city, it should be reinforced with

infantry. City fighting is generally a slow, laborious process and planning must be detailed and well coordinated. Troops must be carefully briefed and informed concerning characteristics of city fighting.

CRITICAL SYSTEMS

Once inside built-up areas, dismounted *infantry becomes the key system. While attacking, they routinely lead, often fighting from house to house and room to room. In the defense they occupy and strengthen forward positions inside buildings.*

Scouts usually dismount to reconnoiter or screen the flanks of either an attacking or defending force.

Tanks may move forward for a rapid thrust through light construction, but their vulnerabilities must be recognized. In heavier construction, tanks must use the cover of cleared buildings in order to support the movement of the infantry by fire. If the squadron is also responsible for terrain outside the built-up area, the majority of tanks may be used there to capitalize on their mobility and range.

TOW's are also most effectively employed on surrounding terrain features to isolate the built-up area and prevent enemy reinforcement. At times, however, the best fields of fire and protection may be from inside the built-up area. Like tanks, TOW's can use the cover of cleared buildings, exposing themselves only long enough to engage the target. TOW's can also be dismounted and placed inside buildings if sufficient space exists.

Available *engineer* elements are especially valuable in built-up areas. They create and breach obstacles and barriers, help squadron elements with explosives, clear away rubble, maintain routes for combat vehicles, and breach walls to permit move-

ment through buildings. Combat engineer vehicles (CEV) are ideal for destroying buildings and creating rubble to impede enemy attacks.

When defending in, or attacking through a built-up area, squadron *mortars* will normally consolidate and provide general support to the squadron. Because of their high angle of trajectory, mortar rounds may frequently be used to engage targets masked by buildings and protected from artillery fire. Mortar WP rounds can assist in disengagement, screen the movement of units, and ignite combustible buildings occupied by the enemy.

Field artillery units support from outside the built-up area unless the area is extremely large. High angle fire is used. The decision to use preparatory fire in an attack is made by the division or corps commander after determining the effect that rubble and burning buildings will have on movement. To destroy buildings housing enemy strong points, artillery may also be used in the direct-fire role.

Tactical air reconnaissance missions can provide detailed intelligence on enemy dispositions and capabilities. Air photos are useful, especially if recent maps are not available. Close air support can provide the ground commander with selective and discriminating air-to-ground fire support. In addition to general purpose bombs, cluster bomb units, rockets, and guns, the Air Force uses several guided bombs and missiles especially suited for engaging hard point targets.

OFFENSE

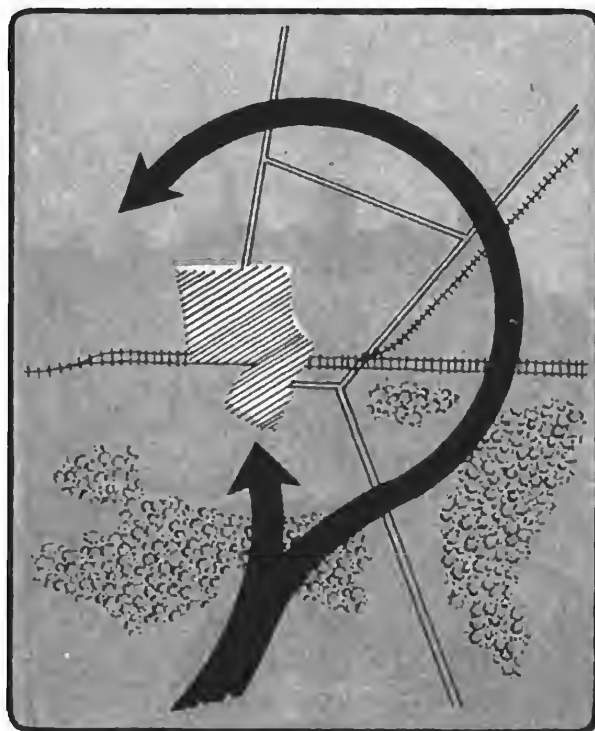
Actions Appropriate for Villages, Towns, and Cities. In accordance with the cardinal principle of offense—attack where the enemy is weak—defended built-up areas should not be attacked if they can be suppressed or bypassed. However, due to the number of built-up areas, it will often be

necessary to eliminate resistance from an area which blocks a supply route or which could inflict losses on a force attempting to bypass.

There are three phases of the attack, any of which may be altered or eliminated based on the commander's intent, enemy strength, size and type of construction in the built-up area, and soldiers and equipment available.

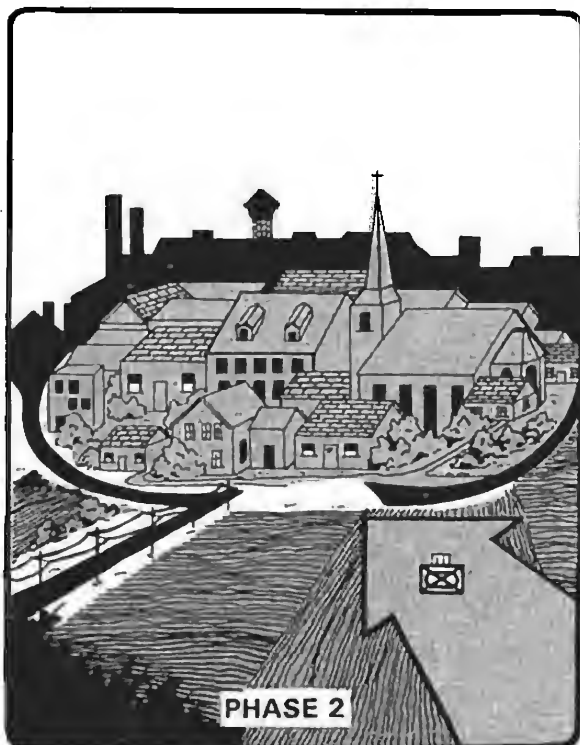
PHASE 1. ISOLATION.

Cavalry isolates the enemy by securing dominant terrain around the built-up area and restricting the enemy's ability to resupply or reinforce. The size force required depends on the availability of dominant terrain and observation. If the mission is only to contain the enemy, isolation becomes the overall concept of the operation.



PHASE 2. SECURING A FOOTHOLD.

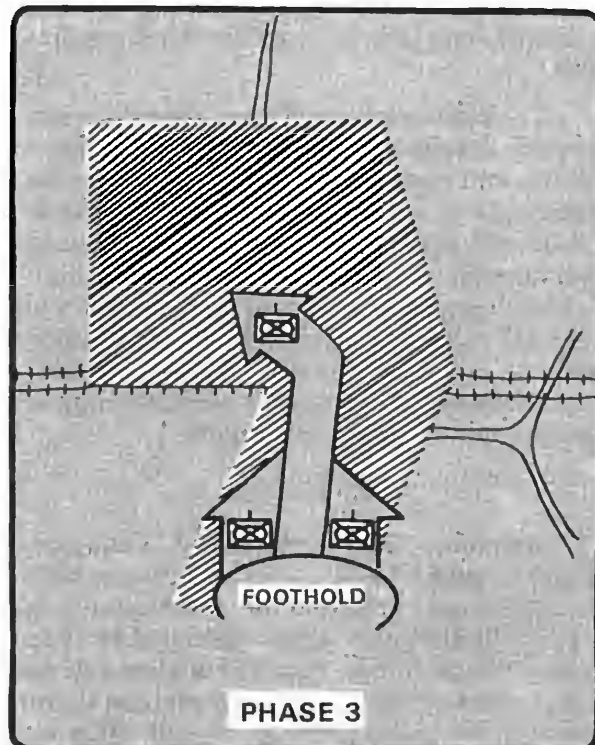
Cavalry secures a foothold in the built-up area which provides cover from enemy direct observation and fire and allows for the displacement of forces and equipment, including forward supply points and aid stations. This action is required each time the attacker must move from a position of inferior cover and concealment (from open terrain to a residential area or from a residential area to a business district). The foothold is normally one or two blocks assigned to a troop or company as an intermediate objective. The inferior cover and concealment, initially characteristic of this phase, should be offset by isolating the objective with fire and smoke or by attacking during periods of limited visibility. Cavalry can secure a quick foothold in a residential area, but should not operate in this role in a dense business district or if prolonged fighting is anticipated.



PHASE 3. CLEARING THE BUILT-UP AREA.

There are two basic methods of clearance used to secure either a small built-up area or an assigned zone in a larger one. These are the *rapid advance* and the *systematic clearance*. Both require dismounted operations to root out any defending enemy. If an exhausting search of every room of every building is required, the attack in either case will progress very slowly.

- **Rapid Advance.** This type of advance may be used when a critical objective has been identified. This critical objective may be a public utility, bridge, airfield, or any facility, structure, or terrain feature which provides a definite advantage. A strong, rapid advance force drives toward the critical objective as



quickly as possible, clearing only that part of the zone necessary to sustain the advance. As this force moves forward, the remainder of the attacking force clears the zone, including the areas hastily cleared by the rapid advance. Disruption of the enemy's system of defense by the rapid advance force should make zone clearance easier. Ideally, the rapid advance force moves through an area of known enemy weaknesses. Local air superiority and suppression of enemy air defense weapons may permit insertion of the rapid advance force on or near the critical objective by helicopters.

- **Systematic Clearance.** If no critical objective has been identified, or if a strong enemy or densely built-up area prevent a rapid advance, the systematic method of clearance may be used. In this method cavalry should be used as in a phase 1 operation on dominant terrain around the built-up area to isolate the enemy and restrict his ability to resupply or reinforce.

Actions Appropriate to Strip Areas. Lightly defended strip developments must not be permitted to slow the advance of the attacker. They are not easily bypassed, but weak points can be isolated by suppression and obscuration. Heavy concentrations of direct and indirect fire should support a penetration through the strip by fast moving armor forces. If the enemy force does not withdraw after the penetration, suppression and obscuration of the flanks must continue to let the attacker pass through. Such areas must be eventually cleared by follow-on forces.

DEFENSE

A squadron may be given the mission to defend in a built-up area when it can:

- Control an avenue of approach, especially when the area is a choke-point or restricted area through which the enemy must pass.
- Cover an obstacle, such as an unfordable river, by fire.
- Cover an area by fire into which an enemy force can be canalized by obstacles or fires from other units.
- Deny the enemy access to a critical installation.

When defending inside a built-up area, the defender must recognize that fields of fire for direct-fire weapons are short, and mutual support between units is difficult to achieve. These conditions necessitate considerably more forces to defend a given area than would be required in open terrain. Conversely, if *holding* the built-up area is not critical, it can be effectively used as an economy-of-force area.

Defense of a Sector in a Large Built-up Area. In a large town or city the squadron, reinforced with infantry, may be given a sector to defend. Three or four city blocks would be typical. This, however, should not be done routinely. A series of battle positions (buildings or groups of buildings) is normally established and prepared for all-round defense. Although mutual support between battle positions should be maintained, the very nature of built-up areas often allows the enemy to infiltrate between positions. Thus, the defender must identify:

- Positions which enable him to place surprise fires on the enemy.
- Covered and concealed routes be-

tween positions (subways and sewers) which facilitate rapid movement of dismounted forces.

- Structures which dominate large areas.
- Areas such as parks, boulevards, rivers, super highways, and railroads where AT weapons have fields of fire.
- Firing positions for mortars.
- TOC locations which offer cover, concealment, and ease of command and control.
- Protected storage areas for supplies.

Normally, two or three mechanized infantry platoons are positioned in depth to block avenues of approach. This force or part of it may be given the mission to reinforce forward infantry and conduct immediate counterattacks. Tanks occupy firing positions where they can augment the fires of forward infantry and assist counterattack efforts. When attacking large built-up areas, the enemy's reconnaissance elements attempt to identify defense weaknesses to be exploited by his first echelon forces. His forces try to bypass strongly defended areas in order to get into the defender's rear, isolate defending elements, and destroy the integrity of the defense. To avoid being bypassed and isolated, the squadron must identify alternate and supplementary positions and be prepared to occupy them as the attack develops.

Defense of a Small Town. The considerations of gaining fields of fire and cover are often conflicting. The forward edges of a town usually offer the best fields of fire, but in most cases they are easily targeted by enemy overwatch and supporting fire. These areas often contain residential buildings constructed of light material. Factories, civic

buildings, and other heavy structures which provide adequate cover are deeper in the town and have limited fields of fire.

Since the forward edge of a small town is the obvious position for the defender, it should be avoided unless:

- Terrain limits the enemy's ability to engage it with accurate fires.
- The forward edge of the town contains strongly constructed buildings which offer protection.

A cavalry troop or squadron may initially take battle positions on the forward edge of the town to gain early warning of the enemy's advance, engage him at long range, and deceive him as to the location of the defense. However, cavalry must withdraw in time to avoid decisive engagement. If observation is not feasible from the forward edge, cavalry should position itself on more favorable terrain forward or to the flanks of the town.

To deny the enemy the ability to bypass or encircle the town, particular emphasis must be placed on control of surrounding key terrain and coordination with adjacent forces. This is an excellent mission for cavalry in a built-up area.

Supplementary positions and covered routes should be prepared to allow a rapid shifting of forces to meet an enemy attack from any direction.

Using Strip Areas in the Defense. If visibility is good and sufficient fields of fire are available, cavalry can occupy positions within a strip and deceive the enemy into thinking it is an extensive defense line. Tanks and ATGM's can inflict high losses on attacking enemy armor elements and slow their advance. Strips also afford covered avenues of withdrawal to the flanks.

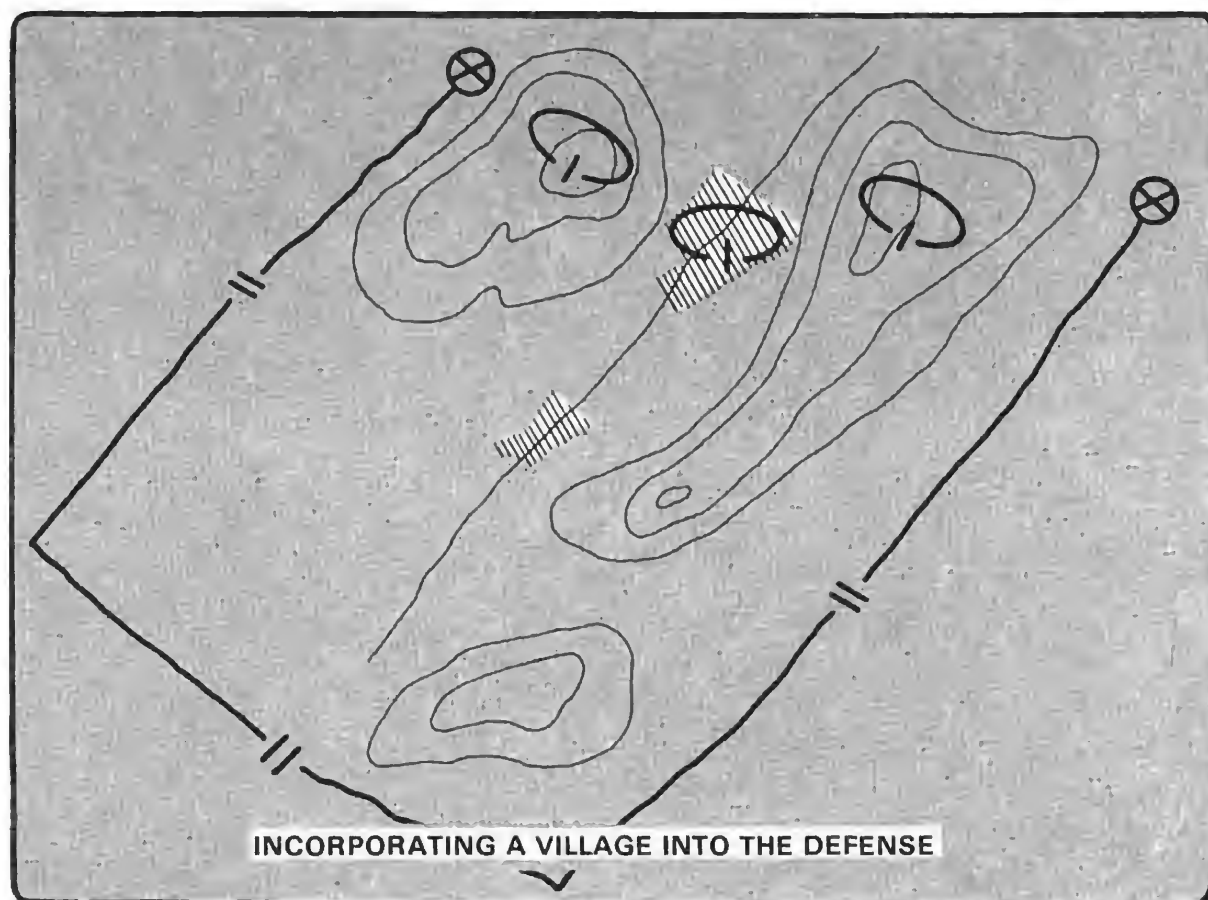
Incorporating a Village into the Defense. The commander may position part of his force in a small built-up area to gain cover and concealment or to make maximum use of the built-up area's obstacles.

In the following example, a village is situated on a chokepoint in a valley, dominating the only high-speed avenue of approach through the sector. The buildings in the village are strongly constructed and provide excellent protection against both direct and indirect fires. Placing a troop, or preferably a mechanized infantry company in the town, while controlling adjacent terrain with the remainder of the squadron can form the basis of a formidable defense.

When the squadron defensive scheme incorporates a village, adequate forces must

be available to do the job. Infantry elements will be at a premium, both to occupy buildings in the village and to block possible dismounted enemy bypass attempts.

Since villages are often only 2,000-4,000m apart, squadron ATGM's and tanks may be able to provide mutual support to other villages. Thus, battle positions within a group of neighboring villages could provide a system of prefabricated and mutually supporting positions in depth. Enemy armored forces would likely be able to bypass one village, but would probably take high losses in attempting to bypass the entire group. Therefore, enemy units will be forced to develop a combined arms attack against a village or a group of villages. Such attacks are costly to the enemy in time and casualties.



OBSERVATION POSTS

During security operations, cavalry units frequently establish observation posts (OP's) for surveillance of a specific area to obtain early warning. *In cavalry, an observation and listening post are the same thing. An OP withdraws only on order. An OP engages the enemy in self-defense, and uses supporting fires to harass, impede, and destroy him.* Personnel manning an observation post use their weapons only in self-defense or for suppression to cover their withdrawal.

Reporting, requesting, and adjusting suppressive fires requires good communications. Radio, wire, or a combination thereof may be used.

When possible, use wire as the primary means of communication from the OP to reduce the chance of enemy interception and subsequent suppressive fires. A wire line from an OP should lie flat on the ground. This makes it more difficult for an enemy patrol to find. A wire line found by an enemy patrol may be cut or followed to the terminals. The enemy will often attempt to take prisoners by cutting a line and lying in wait for a repair party. *Never send one man to check a line.* If a wire must be checked, one man checks the line while being overwatched.

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SITE SELECTION

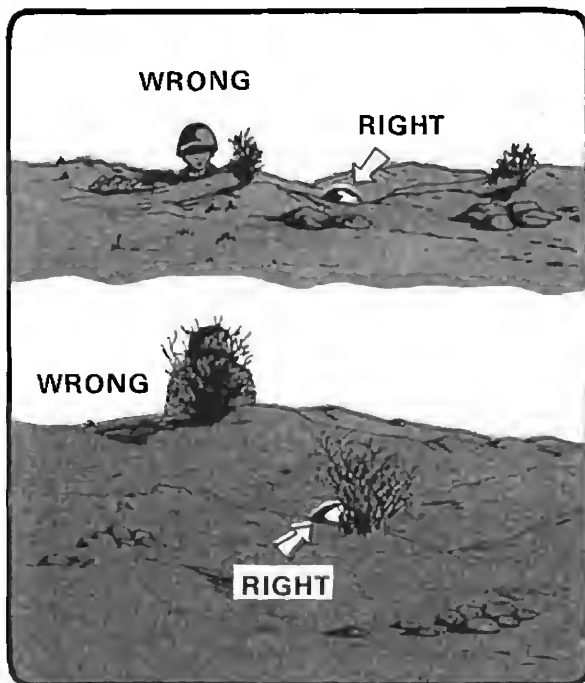
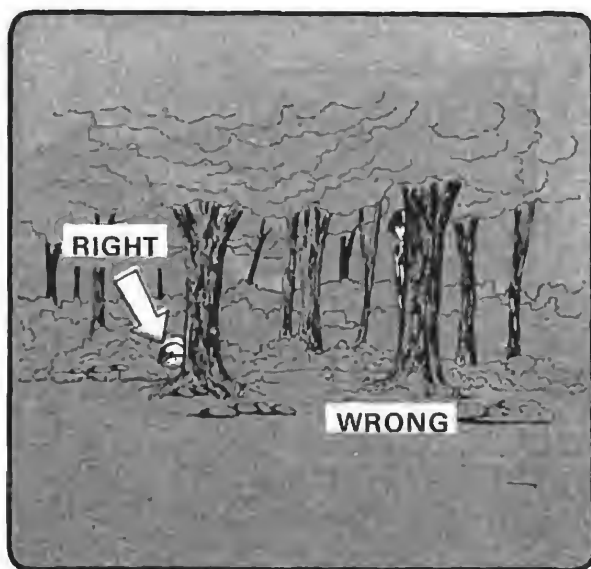
The mission and a map study will indicate the general area and covered and concealed routes. Select the OP site after actually seeing the terrain.

Primary Considerations. Primary considerations for site selection are:

- Field of view.
- Cover and concealment.
- Covered and/or concealed entrance and exit routes.
- Avoidance of landmarks.
- Overlapping fields of observation and other OP's. If overlapping fields of observation are not possible, use patrols to periodically reconnoiter areas which can't be observed from an OP.

Guidelines. Usually, a site higher than the surrounding area is selected to obtain a wide and deep view. It may be a building or a hill slope. Never select a conspicuous area which naturally draws the enemy's attention, such as abandoned equipment, a lone tree, a small isolated grove of trees, a lone building, or a small group of buildings at a road junction or desert way station. The site must not be skylined. It may be located on the forward slope or topographical crest of a hill. If a hill is heavily wooded, a forward slope position generally permits OP personnel greater freedom of movement and usually permits them to be closer to their vehicle(s). Sometimes an OP must overwatch an approach in the desert, or must locate in a valley, draw, or dense woods. The deciding factors are terrain and mission.





MANNING REQUIREMENTS

The number of men at an OP depends on their availability and the number of OP's and patrols required. Two men are required at each OP as a minimum. Three to five men are desirable to reduce fatigue level and provide local security for the observer. In ground cavalry, OP's are manned by scouts. A ground cavalry platoon can maintain six OP's for a limited time. During sustained operations, a ground cavalry platoon should not be assigned an area requiring more than three OP's. In air cavalry, the reconnaissance platoon can also establish OP's. The platoon is equipped and manned to establish four OP's for sustained periods. More can be established if additional radios (and/or telephones) and binoculars are provided. Normally, eight is the limit for sustained periods.

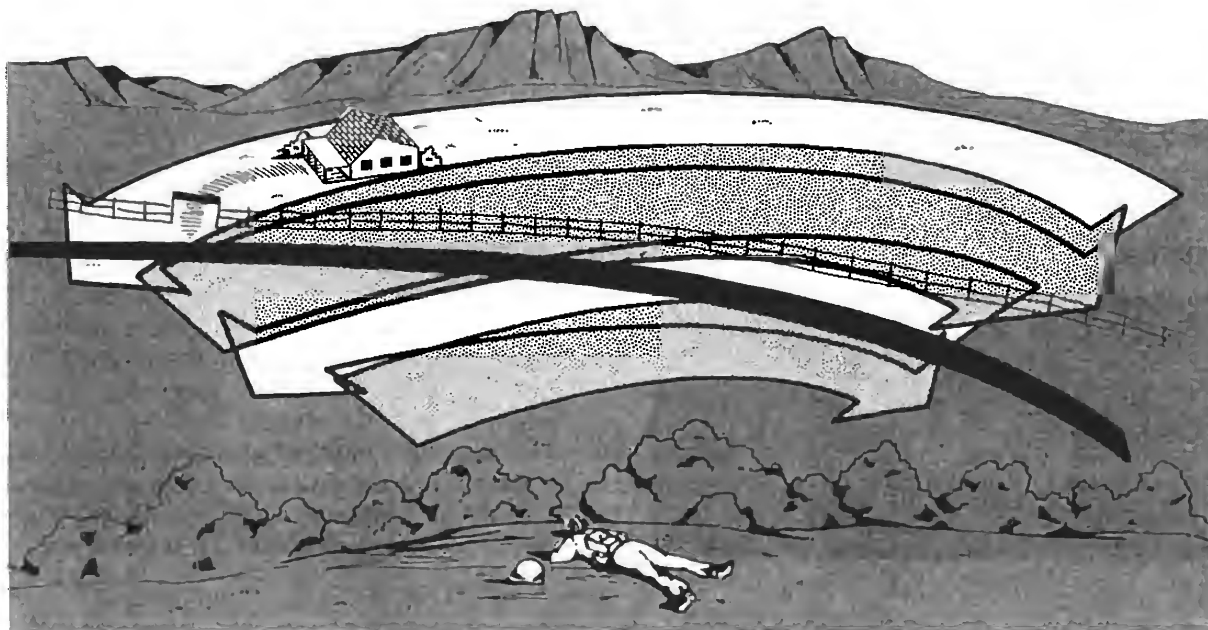
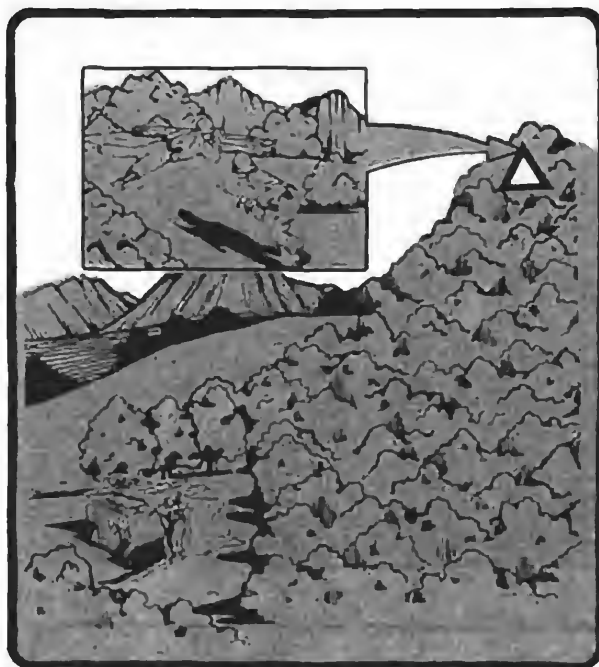
OCCUPATION OF AN OP SITE

Actions on Arrival in the Area. On arrival in the general area, halt in cover and concealment and visually search for signs of the enemy and routes. Select the route providing the best cover and concealment and intermediate stopping places from which the area can be observed. Sometimes the best route is not the most direct. Approach the site from the rear. Dismount and move to the exact site by a covered and concealed route. (In desert or great plains areas affording little cover or concealment, it may be desirable to remain mounted.) Remain undetected.

Location of Vehicles. When cover and concealment are available, ground vehicle(s) are usually left to the rear of the site, placed to facilitate movement out of the area and to permit OP personnel to withdraw under overwatch. If movement to the OP is by helicopter, dismount some distance from the actual site on a reverse slope or behind tall trees to prevent alerting the enemy. After dismounting OP personnel, a helicopter should leave the area. On call, the helicopter retrieves OP personnel at a predetermined rendezvous point.

ACTIONS AT AN OP

Immediately on reaching an OP, hastily scan the entire area with the naked eye. Use binoculars and other vision aids to look closer at suspicious areas. Afterwards, systematically search area from right to left in overlapping belts.

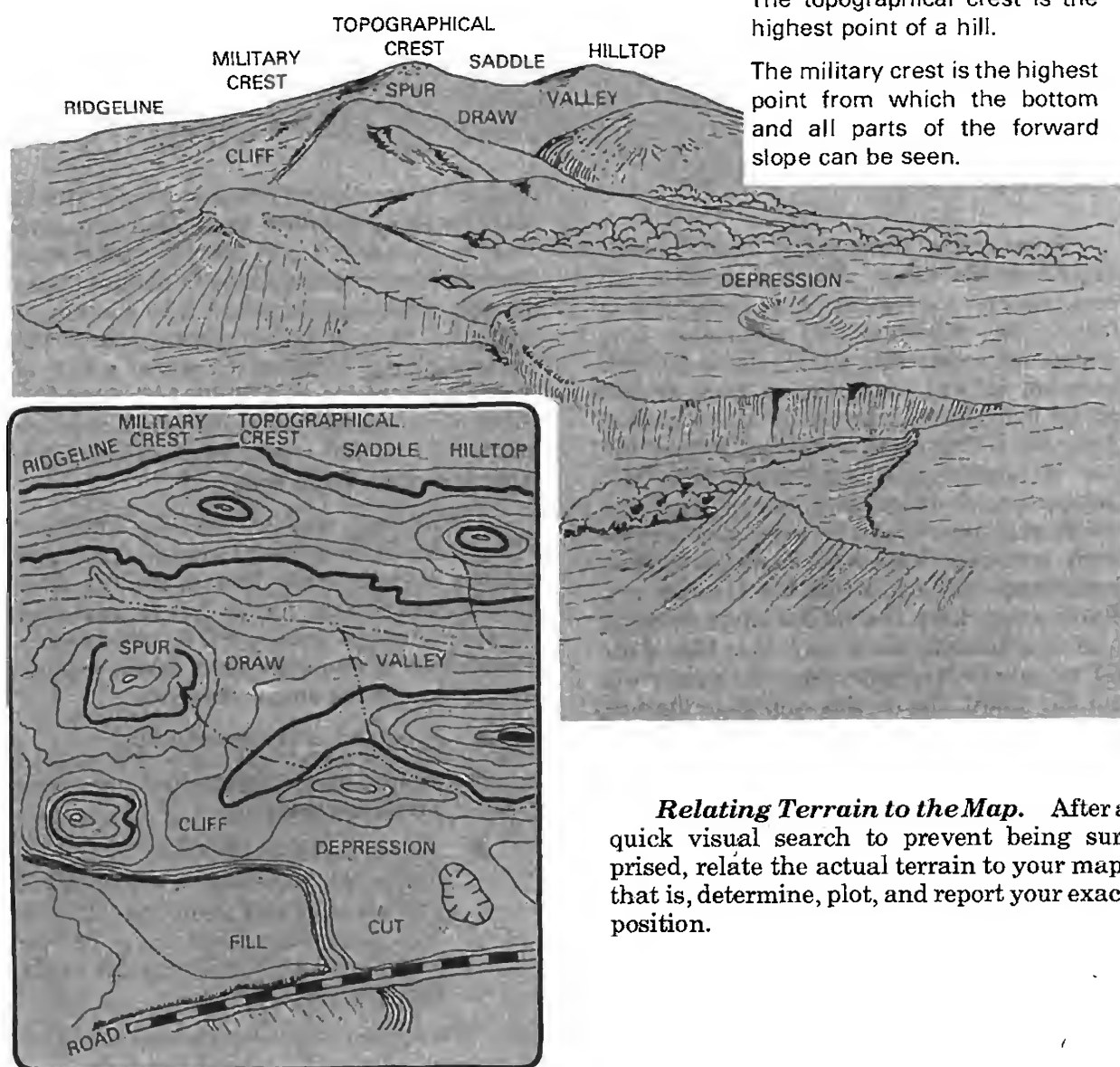


Surveillance. The use of overlapping belts ensures no area is overlooked and improves detection probabilities as your eyes are focused for a specific range. First, search the nearest belt to prevent being surprised in

position. Then, search the next belt in the same manner. Surveillance of an area may be accomplished by teamwork. One man may watch the entire area for movement, while another systematically searches with binocu-

lars or other vision aids. The human eye is naturally attracted to movement. The detection of stationary men or machines is best done by a systematic search of the area. Use sight, hearing, and available STANO equipment. Observation telescopes and binoculars are as important at night as during daylight. During periods of limited visibility, it may be desirable to locate a radar team with an OP to supplement the surveillance effort. At night, use binoculars and night vision devices. (See

FM 21-75 for night vision training and techniques.) During darkness and fog, detection of the enemy by sound becomes very important. The snapping of a branch, men moving through water or mud, the clanking of equipment, or a cough or whisper will identify enemy activity. A moving tank or other tracked vehicle is often first detected by the noise it makes. Sometimes the enemy will attempt to mask noises of moving vehicles with artillery fire.

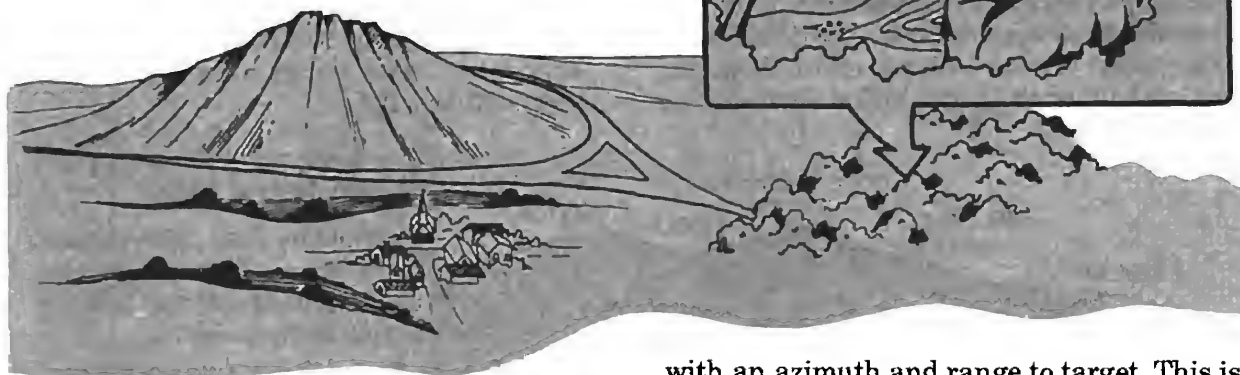


The topographical crest is the highest point of a hill.

The military crest is the highest point from which the bottom and all parts of the forward slope can be seen.

Relating Terrain to the Map. After a quick visual search to prevent being surprised, relate the actual terrain to your map; that is, determine, plot, and report your exact position.

Keeping the Map Oriented. Keep the map oriented with the OP's field of view. This is necessary for quick and accurate reporting and efficient use of indirect fires. Report information using a standard reporting format (appendix B).



Remaining Concealed and Providing Early Warning. While at an OP, avoid unnecessary movement and noise. Never forget the importance of remaining concealed. After detecting an OP, the enemy will saturate it with suppressive fires and/or attack to capture a prisoner for interrogation. Plan for withdrawal, including routes and use of smoke and suppressive fires. Use antipersonnel (claymore) mines and trip flares to improve local security and provide early warning. Site claymore mines so their backblasts will not strike the OP. Set trip flares away from the OP for early warning and to silhouette the enemy. It is best if the OP remains in darkness. Since the enemy will employ night vision aids and illumination, use the same techniques of movement and remain undetected as during daylight.

Determining the Location of an Enemy Weapon Firing at Night. At night, good map reading may not be sufficient to pinpoint the location of an enemy weapon. The requirement to remain undetected may not allow enough light to see the map, or it may not be possible to relate the location of an enemy weapon to specific terrain. However, effective suppressive fire is possible by supplementing the OP's location

with an azimuth and range to target. This is done by using the flash and sound technique and a compass. Light travels faster than sound. As soon as the flash of a firing weapon is seen, start counting and take a compass azimuth. Stop counting when noise of the weapon firing is heard. Count at a rate of three counts per second. Multiply the count by 100m to determine range. A count of seven multiplied by 100 would mean the target is approximately 700m away.

Obtaining and Adjusting Indirect Fire. An OP frequently requests, spots, and adjusts indirect fires. This is usually done through the platoon leader, but at times may be done through a troop FO or other entity. Regardless of channels used, basic requirements remain the same. These are:

- A means of communication.
- A map and, if available, binoculars and a compass.
- An observer-target line. This requires the positions of the observer and an adjusting point to be known. The adjusting point may be the target or a well-defined point in the target area.

See FM 6-40-5 for a detailed discussion of how to request, spot, and adjust indirect fires.

COMMAND POSTS, COMMUNICATIONS, AND ELECTRONIC WARFARE

COMMAND POSTS (*CP*)

The main command post and tactical command post are the principal command control agencies used by cavalry units from regiment through troop level. Normally, all cavalry units except a platoon employ main *CP*'s and tactical *CP*'s. A platoon does not have a *CP*. The principal focal point in a cavalry platoon is the platoon leader. In his absence, it is the platoon sergeant. Usually, headquarters elements of cavalry units from regiment through troop level organize in two echelons for combat. These are the main *CP* and trains. Composition of the main *CP* varies from place to place, but it includes a tactical operation center (TOC) for operation and intelligence functions and any other elements the commander chooses to include. Actual composition should be defined by unit SOP. A commander frequently operates forward of his main *CP* by means of a tactical *CP*. Essential elements of a tactical *CP*, sometimes called a command group, are the commander, artillery liaison officer at regiment or squadron level (FO at troop level), and transportation and communications elements.

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SELECTION OF A CP SITE

Normally a commander or S3 will designate a general CP location. The actual site is usually selected by the headquarters troop commander and/or C-E officer at the regimental or squadron level. The actual site at troop level is usually selected by the executive officer and/or the first sergeant. When selecting a CP location, they consider:

Communications. The location must permit communication with higher, lower, adjacent, and supporting units. High ground facilitates radio communications, especially FM radio, which essentially depends on the line of sight. However, high ground desirable from a communications viewpoint may not be readily accessible and may not provide cover and concealment. Use of retransmission stations and the locating of antennas 200-300m away permit a CP to be located on a reverse slope or in defilade.

Accessibility. A CP should be readily accessible from the ground. Crossroads and other prominent landmarks frequently fired on by the enemy should be avoided. A helicopter landing area with access via masked routes near a regiment or armored cavalry squadron main CP is desirable. It is essential for air cavalry squadrons and troops. A landing area located in the vicinity of a cavalry CP is not a laager area. It is used for command control and liaison helicopters. It is usually best if a helicopter landing area is located some distance, perhaps a kilometer, away from the site. Personnel are taken to the main CP by other means. This is particularly important in desert areas because of dust.

Security. Security is achieved by locating with, near, or in the rear of friendly forces and utilizing the best cover and concealment available. Vehicle crewmen and other personnel must provide local security.

Security is also improved by using good communications procedures. Even when secure radio transmission facilities are used, an electronic signature remains. Although the enemy may not be able to understand message content, he can determine location of the transmitting antenna, gain intelligence from traffic analysis, and apply suppressive fires. Cavalry CP's must rely on radio as the primary means of communication. Thus, measures should be taken to minimize intelligence the enemy can gain from radio communications. This can be done by using other means of communications, whenever possible, and avoiding lengthy radio transmissions. If enough frequencies and radios are available, different frequencies can be used for transmission and reception. This technique compounds enemy interception and traffic analysis. Frequent movement of CP's reduces the enemy's ability to pinpoint their location and apply suppressive fires. When a CP receives enemy artillery fire, it should immediately displace. An artillery attack against a CP should not be reported in the clear, as the enemy will know his fire is effective.

Cover and Concealment. A CP should be concealed from ground and aerial observation. Cover should provide protection from enemy direct fire. It can be achieved most easily by locating on a reverse slope or in a woods, gully, or ravine. Wooded areas offer good concealment. At times, it may be desirable to locate a CP in a built-up area to reduce its infrared signature.

Hardstand and Drainage. Ground should be firm enough to support CP vehicles. Drainage is often an important consideration, as a sudden rain or thaw may quickly flood low ground or mire the vehicles.

Dispersion. The site must permit

dispersion of vehicles and facilities, preferably in covered and concealed positions. Dispersion will reduce losses if the CP comes under artillery or air attack. On the other hand, need for dispersion must often be balanced against need for security against ground attack. Dispersion in a CP is also dictated by terrain. Vehicles forming a tactical operations center (TOC) must be together. All other vehicles should be dispersed enough to prevent one round of medium artillery fire from destroying more than one vehicle.

REGIMENTAL MAIN COMMAND POST

Composition. Composition varies according to the tactical situation and desires of the commander.

Internal Arrangement. A regimental main CP should be arranged to facilitate work and security; take advantage of cover, concealment, and dispersion; and permit quick displacement. Each regiment should have an SOP prescribing the arrangement of its CP. These general considerations apply to arrangement:

- S2, S3, and S3 Air vehicles are usually centrally located to form the TOC.
- A dismount and message pickup and drop point may be located near the entrance to keep out vehicular traffic and provide an orientation point for messengers. This point is normally manned by personnel from the communications platoon and/or scout section. In open areas, such as desert and great plains, this point may serve no useful purpose. In such areas, a CP may often be entered or exited at numerous points.

- CO, XO, aviation officer, fire support section, tactical air control party, and liaison officers are usually located with the TOC.
- Tactical CP vehicles in the main CP are usually located where they can best contribute to security.
- Only essential wheeled vehicles should be located with a main CP. One or two jeeps may be desirable for transportation to and from the helicopter landing area.
- All vehicles, except those of the TOC, must be dispersed (paragraph G-2).

Main CP arrangement should provide security against ground and air attack. Normally, a team of the regimental air defense section positions away from the CP in the most probable direction of enemy attack. Each vehicle with a weapon is assigned a sector of responsibility in case of air and/or ground attack. Normally, the headquarters and headquarters troop commander is responsible for the location of elements at the main CP site.

Displacement. The headquarters and headquarters troop commander is usually responsible for the displacement of a regimental main CP. A regimental CP displaces as necessary to maintain communications. It should also move frequently to reduce the chance of being located by radio direction finding elements. This helps avoid suppressive fires which generally follow detection by the enemy. Displacement may be accomplished in several ways:

- *Establish a forward main CP.* Elements of the S2 and S3 sections and the communications platoon form a forward main CP and displace first. The forward CP moves rapidly to the new location, establishes communications, and assumes control while

the rest of the *CP* displaces. Exactly what elements form a forward main *CP* depends on the situation and the commander.

- *Tactical CP temporarily functions as the main CP.* A tactical *CP* may function as a forward main *CP* for short periods.
- *Move as an entity and operate on the move.* A regiment will often use this technique during fast-moving operations. A main *CP* can function while moving; however, FM radio communications may be erratic in hilly terrain due to frequent loss of the line of sight. This can be largely overcome by using ground or aerial retransmission stations.

REGIMENTAL TACTICAL COMMAND POST

A regimental commander frequently uses a tactical *CP* to operate away from his main *CP*. The tactical *CP* is small, mobile, and contains those personnel and communications capabilities a commander requires in order to immediately influence a tactical situation. For additional information, see chapter 3.

AIR AND ARMORED CAVALRY SQUADRON MAIN AND TACTICAL CP'S

Command control in an air or armored cavalry squadron parallels that of a regiment, differing only in scope of operations and level of command. In general, a squadron main *CP* is farther forward and smaller than that of a regiment. By being farther forward,

a squadron *CP* must displace more often than a regimental *CP*. Usually, a squadron main *CP* continues to function while moving. It may displace using any of the techniques discussed on the preceding page. An air cavalry squadron's main *CP* is usually airborne more frequently than that of an armored cavalry squadron.

AIR AND ARMORED CAVALRY AND CAVALRY TROOP CP'S

Air Cavalry Troop CP. An air cavalry troop *CP* differs from an armored cavalry or cavalry troop *CP*, in that it is formed around the flight operations section and it is not usually located as far forward. An air cavalry troop tactical *CP* is frequently airborne. When not airborne, it may be located in the vicinity of a FARRP, main *CP*, or ground maneuver unit.

Armored Cavalry and Cavalry Troop CP. An armored cavalry or cavalry troop *CP* consists of only one or two vehicles. An armored cavalry or cavalry troop *CP* moves behind the platoons, and usually displaces several times a day. Usually, the troop commander and his artillery FO operate from the troop commander's vehicle, away from the *CP*.

CP OF A TANK COMPANY ORGANIC TO A REGIMENTAL ARMORED CAVALRY SQUADRON

The *CP* of a tank company organic to a regimental armored cavalry squadron is generally the same as those of an armored cavalry troop.

ARTILLERY BATTERY ORGANIC TO A REGIMENTAL ARMORED CAVALRY SQUADRON

An artillery battery organic to a regimental armored cavalry squadron uses a battery operations center (BOC) and a fire direction center (FDC) instead of a *CP*. A BOC

accomplishes all the functions performed by an armored cavalry *CP* and also functions as an alternate FDC (FM 6-50).

COMMUNICATIONS

The ability of a cavalry unit to move, acquire and report information, and shoot depends on its ability to communicate. A cavalry platoon leader and a cavalry unit commander must rely on communications to control subordinate elements, gather information, distribute intelligence, and coordinate firepower. Preparation for every operation includes communications planning.

The communications platoon organic to a regiment or squadron performs organizational maintenance on communication and electronic equipment organic to a regiment or squadron headquarters and headquarters troop. The platoon, in coordination with the S4 section, procures communication and electronic repair parts for the regiment or squadron (less cryptographic) and evacuates all communication and electronic equipment requiring repair beyond the organizational level. It also:

- Operates a message center and provides messenger service.
- Installs wire lines to subordinate units and staff sections.
- Operates the parent unit's switchboard and provides panel marking

displays and message pickup facilities.

- Provides facilities for encrypting and decrypting messages.
- Provides radio relay or automatic retransmission facilities and operates a radio teletype station in the regimental or division command net.

COMMUNICATIONS RESPONSIBILITIES

The cavalry commander and/or leader, regardless of echelon, is personally responsible for the adequacy and use of his communications system and for its operation in the system of the next echelon. The commander's communications responsibilities include planning, maintenance, and training.

- *Supporting to Supported.* A supporting unit is responsible for establishing communications with the supported unit.
- *Reinforcing to Reinforced.* A reinforcing unit is responsible for establishing communications with the reinforced unit.

- **Reinforcing to Reinforced.** A reinforcing unit is responsible for establishing communications with the reinforced unit.
- **Lateral Communications.** Responsibility for establishing communications between adjacent units may be fixed by the higher commander or SOP. If no orders fix responsibility, the commander of the unit on the left is responsible for establishing communications with the unit on the right.
- **Restoration.** Both units take prompt action to restore communications between units.

MEANS OF COMMUNICATION

All available means of communication should be used to prevent overloading any one communication means. This helps to minimize the breakdown when one means is disrupted. In cavalry, radio is the primary means of communication. It may be affected by enemy jamming, unfavorable terrain, and bad weather. Wire, messenger, visual, liaison, and sound communication are alternatives to radio.

Selection. Communication means available to the team commander are:

Communication means in each unit depend on personnel, equipment, and transportation provided by tables or organization and equipment and unit commanders. Different means of communication have different capabilities and limitations. Therefore, they should complement each other so that a team, a platoon, or larger unit is not dependent on only one means. Dependence on one communication means endangers command and control. Reliance on several means strengthens it.

Some means of communication are often more effective than others. Selection of the

best means is made by answering:

- How soon must it operate?
- How long does it take to install?
- How long does it take to transmit?
- How open is it to enemy action?
- How reliable is it?
- How much does it cost in resources?

Radio Communications. Radio sets have a common or overlapping frequency range, use the same type modulation, and transmit and receive the same type of signal. This enables all elements to operate together. Stronger sets must be kept within the transmitting range of weaker sets. Operating range depends on:

- Type of set.
- Skill of the operator.
- Weather.
- Terrain.
- Interference.
- Location from which the set is operated.

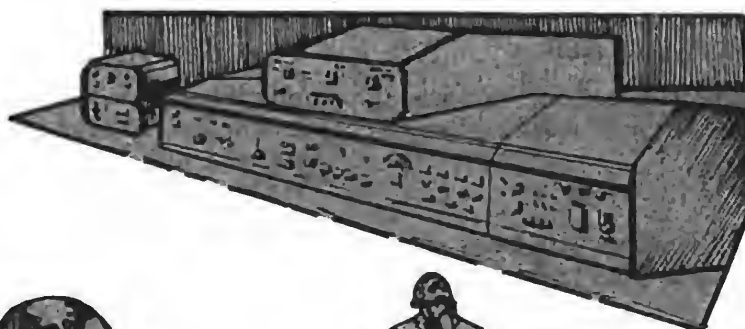
Power lines and steel structures close to a radio site reduce operating range. Radio communications are subject to natural interference, accidental interference from other radio stations, and deliberate interference (jamming) by the enemy.

Wire Communications. The decision to establish wire communications depends on need, time available, and capability to install and maintain wire systems.

Advantages of Wire Communications:

- Wire communications allow person-to-person conversation with break-in

RADIO

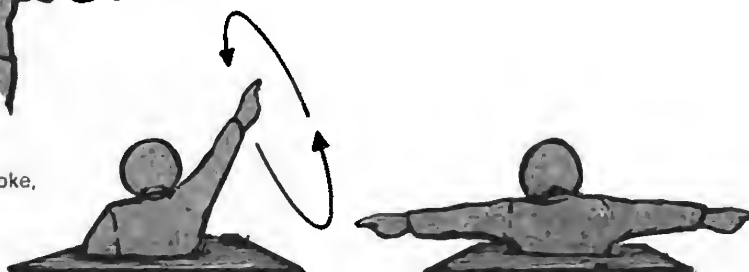


WIRE



VISUAL

May also include flares, colored smoke, and tracer ammunition.



SOUND



MESSENGER



operation. Break-in operation is the ability to interrupt without waiting until a transmission ends.

- Wire communications are less susceptible to electronic warfare than radio.
- Wire communications are more secure and reliable than radio.

Disadvantages of Wire Communications.

- Installing a wire system is time consuming. Proper planning may reduce installation time which is affected by length of lines, methods of laying, type of terrain and weather.
- Wire lines can be broken by traffic or artillery fire, and need regular maintenance. Care should be taken in selecting installation sites and wire routes that avoid these dangers.
- Wire does not necessarily ensure security of information transmitted in the clear because the enemy may tap the line.
- Since terminals must be connected, wire communications are not as practical as radio for highly mobile operations. Wire communications work best in defensive operations and within command posts, but can be used in any tactical operation if properly planned. (See appendix F

for a discussion of the use of wire communications by *OP's*.)

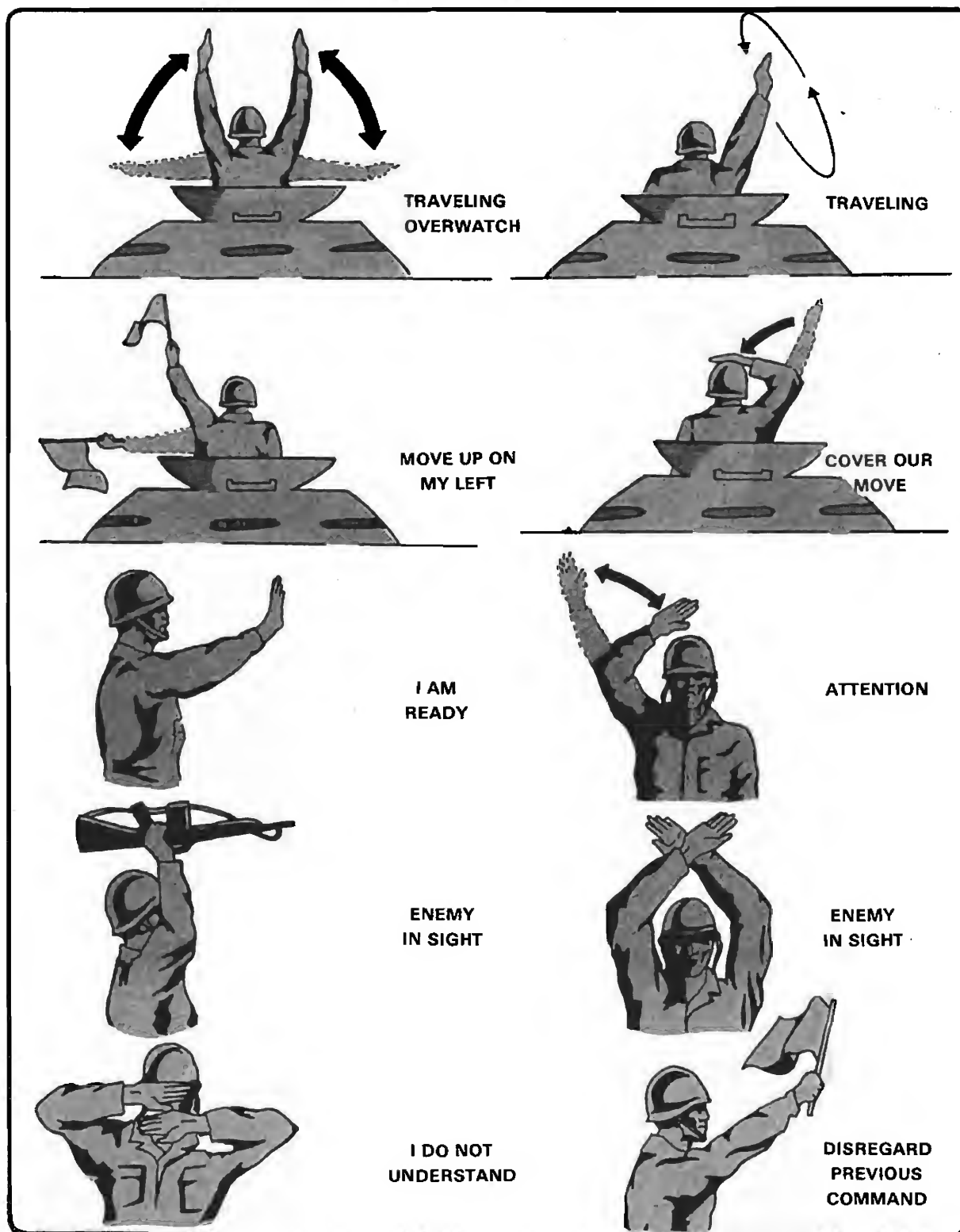
Visual Communications. Visual communications are used for transmitting prearranged messages quickly over short distances and identifying friendly forces. They are particularly useful during radio and listening silence. Visual communications are easily misunderstood and open to interception. The enemy may use similar communications to confuse and deceive. In some situations, they are not used because of security. Visual communications are also restricted when visibility is poor or line-of-sight positions are not available.

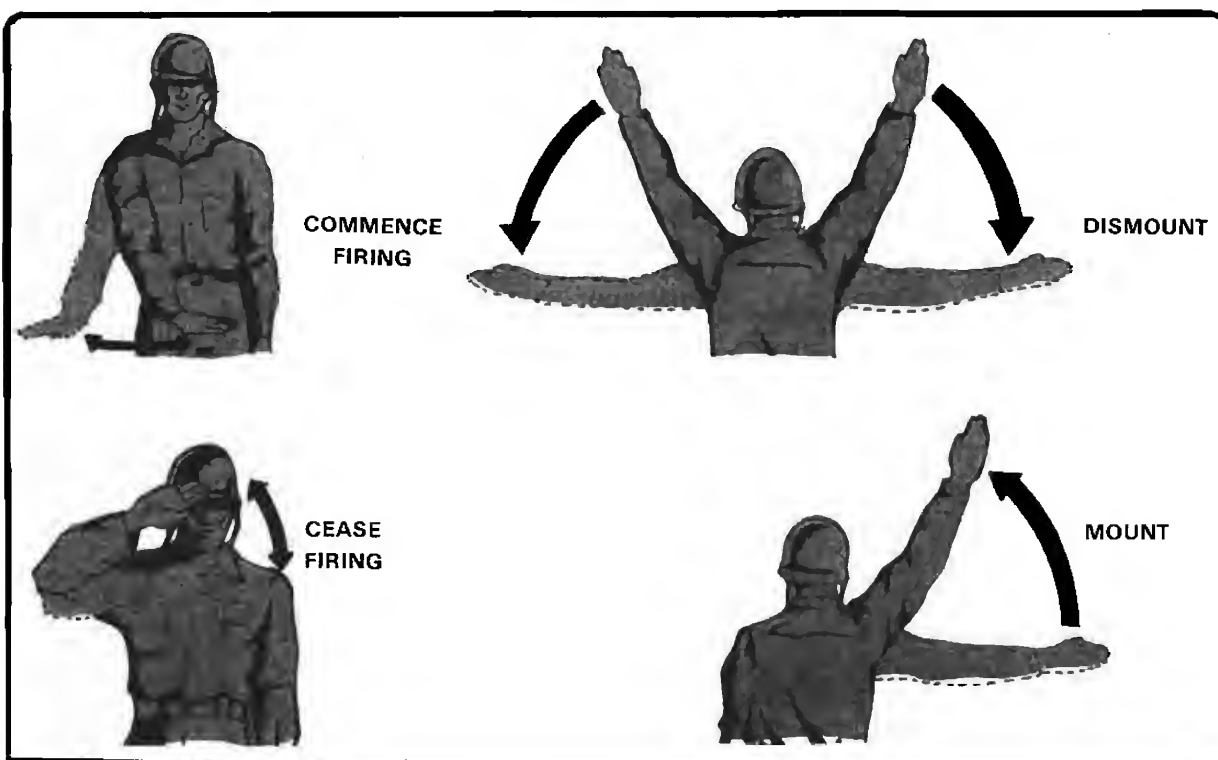
Arm and Hand Signals. Leaders use standard and special arm and hand signals to control small-unit actions, recovery operations, and vehicle movements.

Flags. Messages may be sent with flags by using prearranged signals. Each tank has three flags (red, green, and orange). They may be used to:

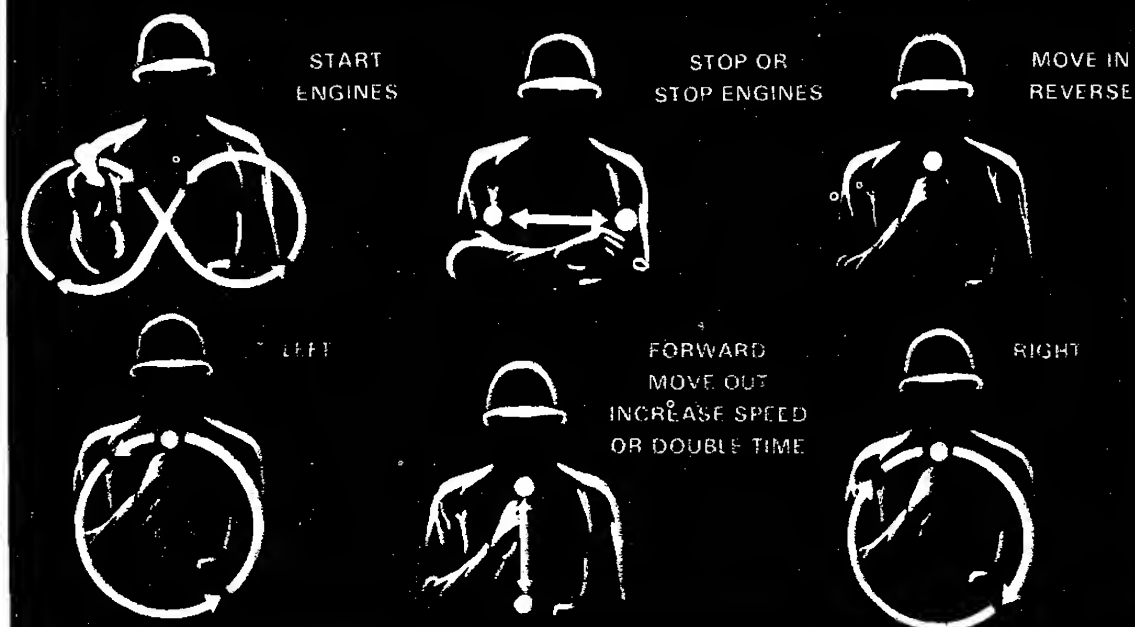
- Control movement. Flags serve as an extension of arm and hand signals.
- Mark vehicle positions. (For example, a quartermaster representative uses flags in an assembly area to mark vehicle positions.)
- Identify disabled vehicles.
- Warn friendly elements of advancing enemy. For example, a flag can be used to signal an overwatch element forward.

ARM AND HAND SIGNALS





NIGHT ARM AND HAND SIGNALS, WITH FLASHLIGHT



Lights. Flashlights, xenon searchlights, and other lights may be used to transmit brief prearranged messages, such as the identity of friendly units, based on signals given in the unit CEOI or fixed by the commander.

The meanings for pyrotechnic signals should be brief and simple. Combinations of colors fired at the same time or in series increase the possibility of error since an observer may be unable to distinguish different colors or may miss part of the series. Receivers of pyrotechnic messages should confirm that the pyrotechnic signal has been seen and understood. Pyrotechnic signals can be easily imitated by the enemy. Therefore, they can't be fully trusted unless the signaller can be identified. Pyrotechnic signals can also be seen by the enemy, so security must be considered to avoid exposing the locations or intentions of friendly units.

Pyrotechnics. Pyrotechnics are ammunitions containing chemicals that make colored smoke or brilliant light. They are used to signal or light an area at night and are available in several types and colors. Pyrotechnic signals are included in the unit CEOI. These signals are generally used for friendly unit identification, fire support control, target marking, and location reports. Pyrotechnics may also be used for ground and ground-to-air communications. Their principal advantage is the speed with which information can be transmitted to large numbers of troops and isolated units.

Panels. Panels are used for communicating with aircraft. They identify units as friendly and mark landing areas, drop zones, and unit positions. Identification displays are normally prescribed in the unit CEOI.

Sound Communications. Simple devices such as whistles, bugles, horns, sirens, gongs, bells, klaxons, voice amplifiers, and explosive devices are used for sound communications. Principal uses of sound communications are to attract attention, transmit prearranged messages, and spread alarms. Range and reliability are greatly reduced by battle noise, therefore, sound signals are satisfactory only for short distances. Since they are open to enemy interception, they may be restricted for security reasons. Sound signals must be simple to avoid misunderstandings.

Messenger Communications. Messenger communications are the most secure means available to units. Messenger communications are flexible, reliable, and best for transmitting lengthy messages. The efficiency of messenger communications largely depends on the selection and training of messengers. Speed depends on the mode of travel, tactical situation, terrain, and trafficability of routes. Limitations of messenger communications include vulnerability to enemy action in forward areas and lack of person-to-person contact.

When necessary, dismounted troops can be used locally as messengers. Air messenger service may be used when aircraft are available.

When possible, a cavalry unit or a team of a platoon should use messengers, thereby, reducing reliance on other means.

Communications Between Dismounted and Mounted Personnel. Communications between dismounted and mounted elements of the team are critical to successful operations.

ELECTRONIC WARFARE

Since the enemy uses direction finding (DF) equipment to pinpoint locations of transmitters, electronic devices such as radios, radars, and infrared equipment are used only when needed. The enemy's DF equipment can locate any radio that transmits in a forward area if there is line of sight between the DF locator and the radio. Transmitting on low power and from behind a hill mass (if the distant station can receive), significantly degrades and can even defeat the enemy's attempt to locate transmitters. Moving immediately after transmitting and before transmitting again confuses enemy DF equipment operators. Wire, directional antennas, and messengers also reduce the chance of detection.

Use the smallest antenna which permits effective communication. Do not hesitate to change from a ground plane antenna to the radio's component whip or stub antenna whenever possible.

A reduced height ground antenna can be mounted into a pole holder welded to the front bumper of a truck and secured with guy wires. This provides a highly mobile command net antenna.

Electronic warfare (EW) is divided into three major components: electronic countermeasures (ECM), electronic counter-countermeasures (ECCM), and electronic warfare support measures (ESM). Electronic warfare support is normally provided to cavalry by corps units especially equipped to conduct electronic warfare.

ELECTRONIC COUNTER-MEASURES (ECM)

ECM are all actions, such as jamming and deception, taken to deny or degrade use of electronic equipment. Prompt reporting of enemy ECM is an important source of intelligence. For details on EW, see TC 32-20.

Jamming is a deliberate attempt to prevent or degrade the reception of information. It is accomplished by a transmitter producing an electromagnetic signal (such as voice radio transmission) on the same frequency as the receiver. Successful jamming blocks out or partially obscures the intended message.

The purpose of deception is to mislead the enemy. It may be manipulative or imitative. *Manipulative deception* involves transmitting false or misleading information over friendly communications nets. This should be done when the enemy is monitoring. *Imitative deception* involves friendly radio operators entering enemy communications systems and pretending to be enemy stations. The purpose is to cause the enemy to react in certain ways or to confuse the enemy.

ELECTRONIC COUNTER-COUNTERMEASURES (ECCM)

ECCM are actions taken to permit use of electronic equipment in an EW environment.

They are preventive or remedial measures.

Preventive ECCM Measures. Preventive measures and continuous training and practice in proper communication procedures and communication tactics are the most important aspect of EW in cavalry units. To perform preventive ECCM:

- Use correct radiotelephone procedures.
- Require authentication when in doubt.
- Use only authorized brevity and map reference codes.
- Correctly locate antennas.
- Use secure-voice equipment when possible.
- Use directional antennas when practical, especially with VHF/FM radios.
- Mask antenna radiation when possible.
- Transmit no longer than 30 seconds.
- Test the radio with a dummy antenna.
- When "remoting" antennas, move them 1,000m or more.
- Do not locate radars with radios. Doing so creates a distinct emitter signature.

Remedial ECCM Measures. Take remedial measures after the enemy begins jamming. First, determine if reception problems are due to electronic and atmospheric interference. If jamming is suspected, disconnect the antenna. If the noise (interference) goes away, the frequency is most likely being jammed. If the noise continues with the antenna disconnected, then the set is probably defective or the interference is being caused by nearby equipment. However, if the enemy is jamming, assume he is also monitoring the frequencies. When jammed, continue to operate and do not discuss the jamming. The enemy may conclude his jamming is not effective and discontinue it.

Other remedial measures are:

- Switch to higher power.
- Use alternate means of communication.
- Relocate radios/antennas to minimize the effects of the jamming signal.
- As a last resort, and when authorized, change to an alternate frequency.
- Use directional antennas.

Operators must report jamming by secure communications means as soon as possible. A format for the report is normally found in the CEOI.

HANDLING PRISONERS OF WAR AND CAPTURED ENEMY DOCUMENTS

Prisoners of war (PW's), maps, military documents, letters, and diaries obtained on the battlefield are very important sources of combat intelligence. In cavalry, these sources are usually obtained by a platoon. A cavalry platoon routinely searches the battlefield for unit identification, maps, documents, and letters. The platoon rapidly reports such information and coordinates with the troop commander for evacuation of PW's and items of possible intelligence value. In some instances, such items and PW's may be taken directly to the troop CP by a scout squad. At other times, the troop commander may rendezvous or direct other elements to rendezvous with the platoons. In cavalry, great emphasis is placed on the correct handling and *rapid evacuation* of captured items and PW's. This is necessary because the sooner trained, experienced intelligence personnel can obtain such assets, the more valuable the information. See FM 30-15, *Intelligence Interrogation* and FM 30-16, *Technical Intelligence* for proper procedures on handling PW's and captured enemy documents.

STAFF RESPONSIBILITY

A regimental and/or squadron S1 plans and supervises the collection and evacuation of enemy prisoners of war (PW's). The S1 does this in coordination with the supporting military police unit. He must ensure that these plans conform to the directives of higher

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headquarters, and that they are clear, complete, and understandable. He coordinates with the S2 for estimates on anticipated prisoners and facilities for interrogation and with the headquarters commandant for the operation of the PW collecting point. He coordinates with the S4 for transportation to evacuate prisoners and with his unit surgeon for the evacuation of wounded prisoners. Emphasis is placed on the proper conditioning of prisoners of war for interrogation. For more information, see FM 19-20 and FM 71-100.

DUTIES OF CAPTURING TROOPS

Capturing troops disarm, segregate, tag, and search PW's for documents of military value. Documents are tagged to identify them with the PW's from whom they are taken and they are evacuated with the PW's. The personal effects of a PW are not taken except on the order of an officer for security reasons. In this event, a property register is maintained and signed receipts are given each PW for personal items taken. Capturing troops segregate PW's according to sex, rank, nationality, and other appropriate categories, and tag each PW to show time, place, and circumstances of capture and capturing unit. Selective interrogation by PW interrogation teams for immediate information may be undertaken in the forward area.

CONSIDERATIONS DURING FAST-MOVING OPERATIONS

Because of the continuous movement of a cavalry unit command post in fast moving operations, the evacuation of PW's and the establishment of collecting points pose problems. To offset these problems, two procedures are followed:

- Supporting MP's normally establish a collection point on the supply route or in the trains area of each committed squadron. This facilitates evacuation from squadron collecting points.

- PW interrogation teams with cavalry operate with minimum facilities. At regiment and squadron level, interrogation of prisoners is limited to immediate information required, such as the location and deployment of enemy antitank weapons and defenses, roadblocks, and tank units. In fast-moving operations, interrogators may be used with the forward elements of the squadron. Facilities for interrogation at regiment and squadron are kept to a minimum, because PW's are questioned only briefly on the spot and evacuated to a division PW collecting point or turned over to other units for evacuation.

CONSIDERATIONS DURING DEFENSE

In defensive operations, evacuation of PW's is normally from the point of capture to the squadron PW collecting point and then to the parent division or regimental PW collecting point. The preliminary interrogation attempts to obtain information of immediate tactical value to squadron commanders. Following the preliminary interrogation, PW's are evacuated to a division PW collecting point for a more detailed interrogation concerning tactical information.

EVACUATION TECHNIQUES

The evacuation of PW's from forward areas presents problems to the company team or troop commander. In fast moving situations, the team or troop commander must rely on attached or nearby infantry, returning vehicles and aircraft, slightly wounded or headquarters personnel, and headquarters vehicles for the evacuation of PW's to collecting points. A company or troop commander must use every possible resource to help evacuate PW's without reducing his combat strength.

A squadron S1, in conjunction with the S4, normally has greater resources at his disposal for the evacuation of PW's than does a company or troop commander. Necessary assistance is given the company or troop required. Assistance from regiment or a division is requested when requirements for the evacuation of PW's are beyond the capabilities of the squadron.

When large numbers of PW's are collected during an operation, cavalry units may be required to help in their evacuation. When planning operations where large numbers of PW's are anticipated, combat units may be assigned a "be-prepared" mission to help evacuate PW's. This type of mission is usually assigned units in reverse or in a follow-and-support role.

Sick, injured, or wounded PW's are treated and evacuated through normal medical channels, but are physically separated from US and Allied patients.

RIGHTS OF PRISONERS OF WAR

Rights of PW's have been established by international law, and the United States has agreed to obey these laws. Once an enemy soldier surrenders, he must be treated humanely. It is a court-martial offense to physically or mentally harm or mistreat a PW. The senior officer or noncommissioned officer on the scene is responsible for the legal care of PW's. A cavalry unit which can't evacuate a PW within a reasonable time must provide the PW food, water, and medical treatment. Mistreated PW's and PW's who receive favors are not good interrogation subjects. PW's should not be given comfort items (cigarettes, candy, etc.) before their first interrogation.

HANDLING PRISONERS OF WAR

In handling PW's, use these five principles (five S's):

SEARCH

- Remove all weapons and documents.
- Return personal items of no military value to PW.
- Leave helmet and protective mask/gear to protect him from the immediate dangers of the battle area.

SEGREGATE

Break the chain of command. Separate by sex, rank, and other appropriate category. Keep the staunch fighter away from those who willingly surrendered.

SILENCE

Keep PW leaders from giving orders, planning escapes, or developing false "cover stories."

COMBAT SUPPORT

Combat support for cavalry units is provided by artillery and mortars, USAF tactical fighter-bombers, and engineer, signal, military intelligence, Army aviation, military police, psychological warfare, and civil affairs units. The size of the cavalry unit, its mission, and distance it operates from the main body generally determines what additional combat support it receives. All elements from regiment through platoon and platoon team are directly concerned in some manner with combat support.

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Missions assigned a combat support unit are normally described in three ways:

- *Direct Support.* The supporting unit establishes contact with the supported unit; and, in the case of field artillery, sends forward observers to supported troop-size units. The supporting unit gives the supported unit priority of efforts. The supporting unit responds directly to supported unit requests.
- *General Support.* The supporting unit supports the supported forces as a whole, responding to requests for support according to priorities established by the force commander.

- *Attached.* The attached unit exclusively supports the unit to which it is attached, as if it were an organic unit. Accordingly, an attached unit must get logistics support the same as an organic unit.

A regiment or squadron has considerable freedom concerning organization of attached combat support units for combat, but very little freedom concerning combat support units in direct or general support. A troop or company seldom has anything to do with organizing combat support elements other than those organic for combat. They may decide to use their surveillance radar section as an entity or by teams. An armored cavalry troop also has the option of consolidating mortars or leaving them with the platoons.

FIRE SUPPORT

MORTARS

★ Under the new TOE, mortars are consolidated at troop level and are only attached to the platoons when the troop zone is too wide for coverage by the consolidated mortars.

The mortars should be in covered and concealed positions well forward to provide support to the entire troop. The section leader in conjunction with the troop commander selects positions from where the mortars can best support the troop's scheme of maneuver. Fire can be adjusted by any member of a platoon and everyone should be trained to do so.

When consolidated, mortars should be in covered and concealed positions well forward to provide support to the entire troop. The section leader in conjunction with the FIST

selects positions from where the mortars can best support the troop's scheme of maneuver. Fire can be adjusted by any member of a platoon and everyone should be trained to do so.

FIELD ARTILLERY

The armored cavalry regiment may receive artillery support from division or corps artillery. Field artillery units may be attached to the regiment when control by the parent headquarters is difficult. When artillery is attached or placed in support of regimental squadrons, the squadron field artillery battery may be placed under the operational control of the supporting artillery unit. The supporting artillery commander then replaces the organic field artillery battery commander as the squadron fire support coordinator.

Divisional cavalry squadrons normally receive artillery support by a modification of the mission given a field artillery (FA) unit. For example, the FA battalion closest to the cavalry squadron may be assigned a mission of general support, modified to provide the squadron a high priority in answering calls for fire. If more responsive fires are required, a DS field artillery unit may have second priority of fires to the squadron.

The commander uses field artillery fire to destroy or suppress enemy elements which can fire on the unit. HE ammunition is used against ATGM teams, infantry, and other relatively exposed elements. White phosphorus or smoke ammunition is used to obscure the enemy view of cavalry elements. Field artillery fire can also be used to destroy or

make ineffective personnel, vehicles, and equipment in command control parties or facilities, logistics areas, and assembly areas. Using improved conventional munitions (ICM), artillery fire is much more lethal against these targets than mortar fires.

Although a field artillery forward observer may be provided at troop level, field artillery fires are normally adjusted by scouts and squad leaders within cavalry platoons.

As a precautionary measure, cavalry commanders/leaders may call for suppressive fires on terrain which may conceal the enemy. These fires should be used judiciously in order to conserve ammunition for better targets, to lessen the detection of firing batteries and to preserve tactical secrecy.

CLOSE AIR SUPPORT (CAS)

The USAF tactical fighter-bomber is an excellent weapon system with which to attack a well-emplaced enemy. It can quickly destroy hard point targets, including tanks. CAS should be integrated into a cavalry unit's scheme of operation and used simultaneously with other fire support means to destroy massed targets. Tactical air strikes are usually controlled by USAF forward air controllers, who may be airborne or on the ground. Cavalry personnel control an air strike only when a USAF controller is not available. The S3 air and fire support coordinator (FSCoord) monitor and acknowledge CAS requests and base recommendations to approve or disapprove requests on the situation and activities, which may be unknown to

the requester. The air liaison officer (ALO), a member of the TACP, advises on aircraft capabilities, limitations, and use, and coordinates approved close air support missions. If the request is disapproved, the requesting unit is notified and told why.

Types of Close Air Support Missions.

- *Immediate* mission requests are those made for CAS that is responsive to specific tactical situations and targets which develop during the course of battle. Mission details are usually coordinated while aircraft are airborne.

- **Planned** mission requests are submitted for CAS that is responsive to anticipated targets in planned operations. Planned missions permit more detailed coordination, more effective matching of ordnance to target, and more economical use of aircraft than immediate missions.

Considerations in Requesting Close Air Support. Requests for *immediate* CAS are normally initiated below squadron level through the chain of command. Requests for *planned* CAS are normally initiated at squadron or regimental level. In either case, most of the coordination is done by squadron or regiment. Because of safety considerations and detailed knowledge of the tactical situation, the troop/company commander or platoon leader most concerned with CAS has final approval on ordnance delivery. Considerations in processing CAS requests are:

- **Time.** Response time of tactical aircraft, if not on station, may be longer than field artillery or naval gunfire. Flying time to the target and time to load special ordnance, if required, should be considered. Under certain conditions, high-performance aircraft are maintained on air alert and are as responsive as ground delivery means. Except for fixed fortifications and defensive works, targets acquired by cavalry units seldom stay concentrated for significant periods of time. Target stay time is compared with response times of the available attack means. If stay time is too short for attack by the most effective means, the most responsive means are used.

- **Target Weapon Characteristics.** Weapons selection is based on lethality and limitations of air, field artillery, and other available fire support means. The attack system is determined by the size and nature of the target, desired ordnance, location of friendly troops, accuracy of target location, and adequacy of control.

- **Observation.** If a ground observer is unable to determine the precise location of a target or can't maintain observation of a moving target, he uses close air support.

- **Ammunition Availability and Re-supply.** Use of CAS against hard targets conserves armor defeating ammunition carried by cavalry units.

- **Danger to Friendly Troops.** The degree of danger acceptable without restricting other supporting arms must be determined. A FSCoord must know the disposition of friendly troops and the tactical deployment of a regiment or squadron and must ensure airspace coordination has been accomplished with the S3 air. A regimental or squadron commander has specific responsibilities related to the safety of CAS aircraft. Restrictive fire plans, shifting of fires, and air defense suppression programs may be required. CAS pilots must be warned of inherent dangers in the mission. This can be done by the FAC, FSCoord, unit commander, division airspace management element (at division level), or in the initial request.

NAVAL GUNFIRE SUPPORT

Control and use of naval gunfire is by special staff or liaison representatives, liaison teams, and shore fire control parties (SFCP) organic to air naval gunfire liaison companies (ANGLICO) of the fleet marine force. These organizations are furnished to a regiment or squadron to provide expertise and communications for naval gunfire support. The naval gunfire liaison officer serves as a member of a regiment, a regimental armored cavalry squadron support element/fire support coordination facility, or a fire support element in a divisional armored or air

cavalry squadron. Direct support naval gunfire can be provided as soon as communications are established between assigned direct support ships and shore fire control parties or other observers. General support, applied to naval gunfire, refers to fire delivered by ships not assigned to the direct support of any specific echelon of the Army force. Requests by subordinate Army force echelons for general support are made through the chain of command to the level controlling general support naval gunfire.

FIRE SUPPORT PLANNING

Fire support planning begins with platoon leaders, FO's, and troop commanders. The troop commander must ensure that his tactical scheme of maneuver and fire support plan are worked out together so they complement one another.

Two types of targets common to cavalry operations are *planned* targets and *unplanned* targets:

- *Planned* targets are those on which fire is prearranged. They may be scheduled or on-call. They should be sighted on confirmed, suspected, or likely enemy locations and prominent terrain to serve as reference points for shifting fires onto targets of opportunity that appear in their vicinity.
- *Unplanned* targets are targets of opportunity which are generally fleeting in nature and should be attacked as soon as possible. Frequently, cavalry is concerned with unplanned targets on which fire can be adjusted by reference to a planned concentration.

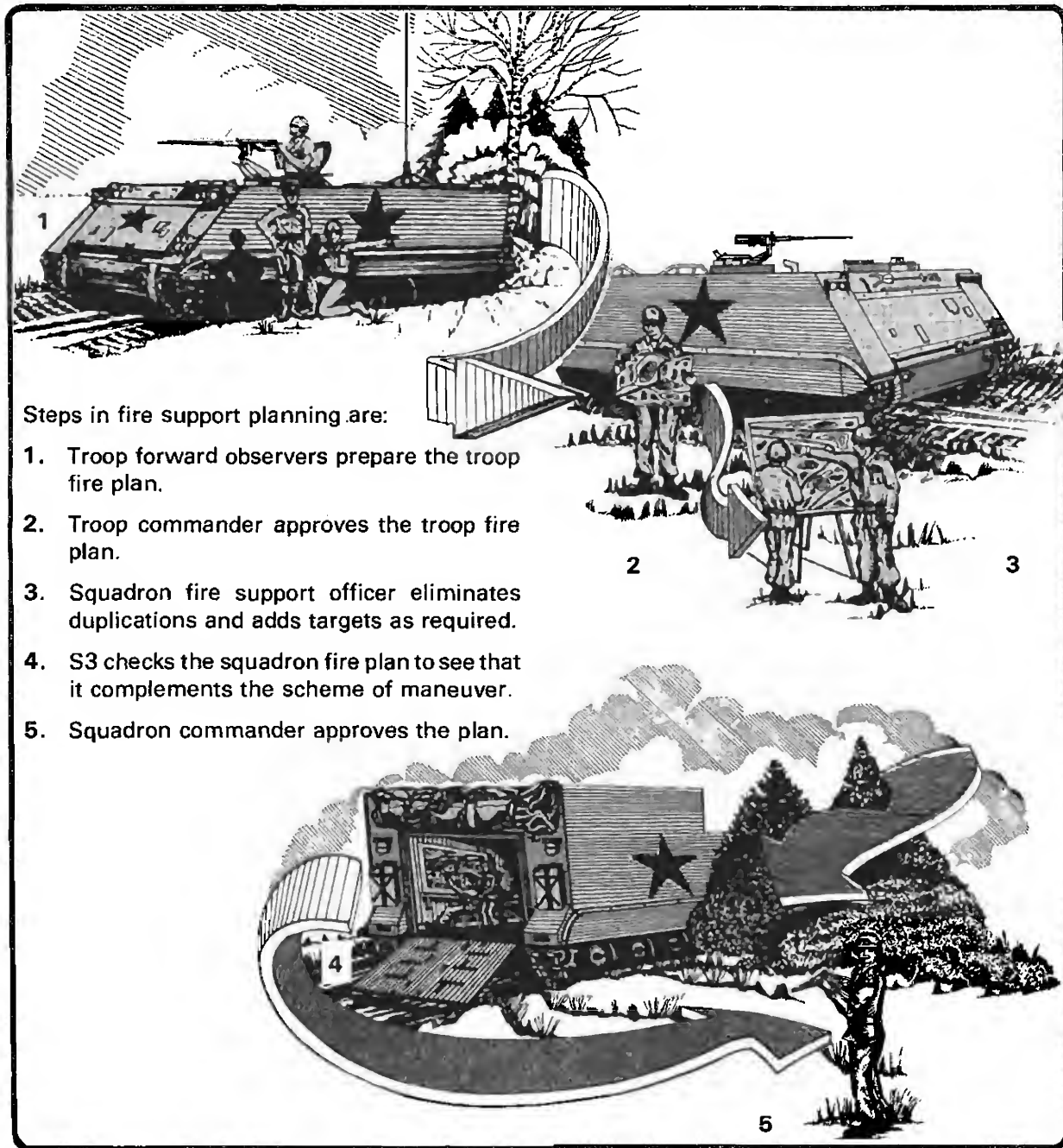
After the troop commander has approved his fire support plan, the field artillery FO assigns each target a letter-number designation from a block of numbers given him by the squadron fire support element. He then forwards a list of targets to the squadron fire support officer (FASO). If the troop does not have an FO, the troop commander assigns the letter-number designation.

The squadron fire support officer (FSO), working with the squadron S3, S3 air, and ALO, prepares the squadron fire support plan. He consolidates target lists from troops, eliminates duplications, adds targets of interest to the squadron commander and additional targets to fill gaps in the plan, and integrates tactical air support into the plan.

The squadron commander reviews the plan to ensure that it complements his squadron scheme of maneuver. When approved, the consolidated target list is provided to the squadron's troops and supporting artillery. In a regimental squadron, the list is also provided to the regimental FSO, who in turn reviews the squadron lists, eliminates duplication between squadrons,

and adds targets of regimental interest. He may also pass targets more appropriate for attack by another fire support means (for

example, USAF) to that agency and inform the affected squadron FSO of his actions.



FIRE SUPPORT COORDINATION

The fire support section of the regiment, regimental squadron, and air cavalry squadron of the ACCB coordinates and advises the commander concerning all fire support. It also establishes and manages the fire support coordination center (FSCC).

The senior artillery officer with the regiment or squadron is the fire support coordinator (FSCOORD). Efforts of the S3 and FSCOORD are supplemented by tactical air control parties (TACP's) provided to a regiment or squadron. They do this by:

- Establishing and maintaining facilities for communications with USAF control agencies.
- Receiving, coordinating, and transmitting immediate requests for tactical air support.
- Advising in Air Force tactical air support matters.
- Controlling airstrikes.

When required, division artillery provides the division cavalry squadron a fire support officer (FSO) for liaison and communication with supporting field artillery. The FSO will be the FSCOORD for the divisional squadron. Fire support coordination is done by the fire support element (FSE) in the squadron headquarters, under the supervision of the FSO. Composition of the FSE will vary from time to time, but normally includes the ALO and representatives of other fire support agencies supporting the squadron. The squadron commander may take the FSO and ALO with him in his command group to forward areas of the battlefield to better coordinate fire support for the squadron. At troop level, the troop commander is the FSCOORD.

In selecting the best means to attack a target, the commander and his fire support officer must consider the:

- Characteristics of the target and the desired effect on the target.
- Characteristics, capabilities, and limitations of available weapons.
- Most economical delivery means.
- Available ammunition supply rate.
- Response time.
- Tactical benefits to be gained.
- Safety of friendly troops.

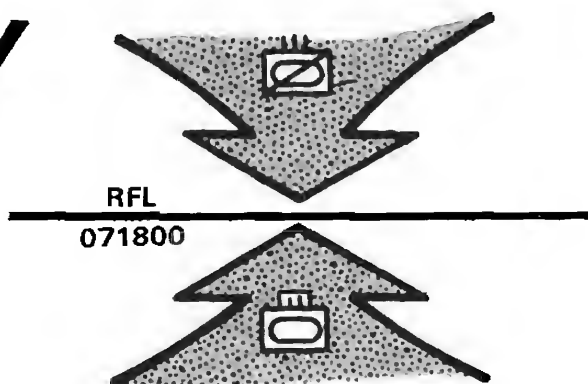
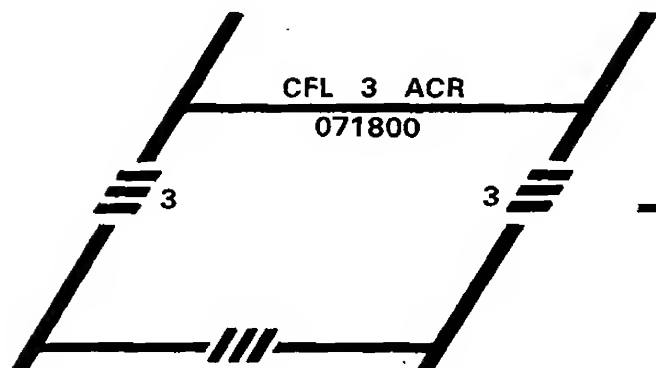
To aid fire support coordination and to ensure the safety of friendly troops, aircraft, and installations, various coordinating and limiting measures are used:

- *Boundaries* are established by maneuver force commanders. No unit may fire into another unit's area of operations without the approval of that unit. However, boundaries are not intended to restrict the concentration of fires on the enemy.

- *Coordinated Fire Line (CFL)* is normally established by the regimental commander based on recommendations of subordinate units. Units may not fire short of the CFL without the approval of the headquarters that established it.
- *Restrictive Fire Line (RFL)* is estab-

lished between forces moving towards each other. Fires beyond the RFL must be coordinated with the approaching force.

The FSO passes coordinating and limiting measures and any other control measures being used by the squadron to the DS artillery battalion.



AIR DEFENSE

The air Threat varies from armed helicopters to high-performance aircraft. Cavalry engages and destroys hostile aircraft as it engages and destroys other hostile targets. Indiscriminate firing must be avoided to prevent danger to friendly aircraft and unnecessary disclosure of friendly positions. This is done by controlling air defense fires using hostile criteria and weapons control status established above regiment. Engagement is controlled by the weapons control status. A regiment or squadron may impose a more restrictive status, but can't implement a less restrictive status. Air defense weapons

control statuses are:

- *Weapons Tight.* Engage only those aircraft positively identified as hostile.
- *Weapons Free.* Engage aircraft not positively identified as friendly. In this status, unknown aircraft may be engaged.
- *Weapons Hold.* Do not fire (cease fire). Weapons hold allows engagement in self-defense.

See FM 44-1 for more information.

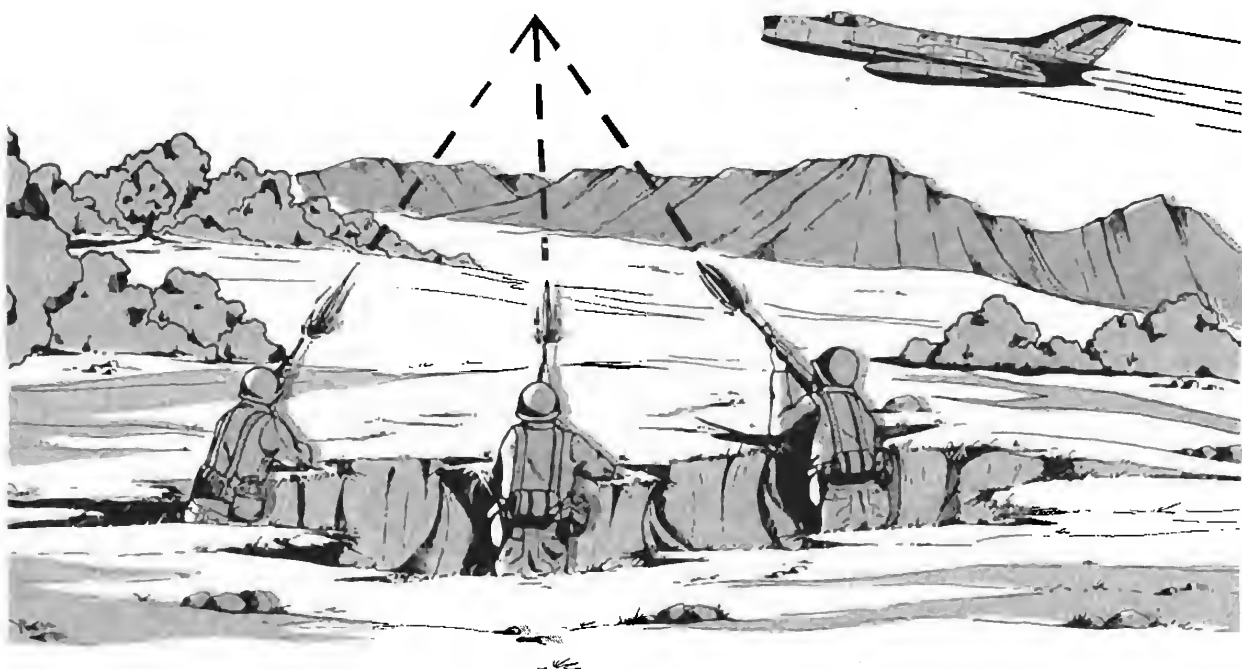
PASSIVE AIR DEFENSE

Passive air defense concerns all measures used, except engagement by fire, to prevent attack by hostile aircraft. The purpose is to avoid detection. Camouflage covering windshields, headlights, or canopies of concealed aircraft makes vehicles more difficult to detect. Whenever possible, elements remain concealed in brush, woods, or shadows. If available and situation permits, cavalry uses camouflage nets. Vehicles are not silhouetted against the skyline or a background of a different color. In snow, vehicles are camouflaged with white wash according to the camouflage pattern established for the theater of operations. At night, a vehicle's lights, soldiers smoking, gun flashes, flashlights, or lights from a shelter or

van may result in an air attack. Passive air defense also concerns movement along covered and/or concealed routes, forests, or shadows cast by mountains or buildings. Strict communications security reduces the enemy's ability to pinpoint friendly units. Lateral and in-depth dispersion helps reduce the effectiveness of an enemy air strike.

ACTIVE AIR DEFENSE

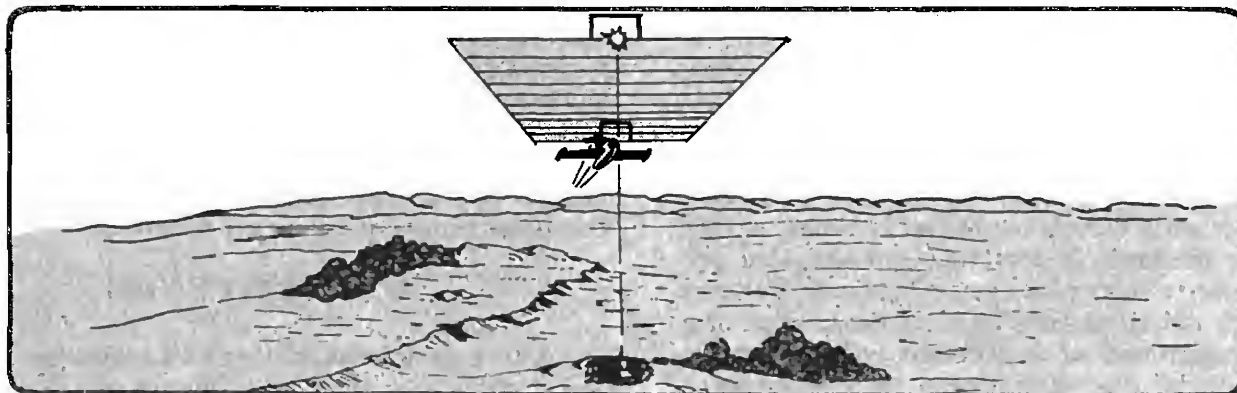
Active air defense concerns all measures and suitable weapons used to engage attacking aircraft. Techniques of engaging aircraft with small arms weapons are summarized below and further discussed in FM 23-12 and 23-15.



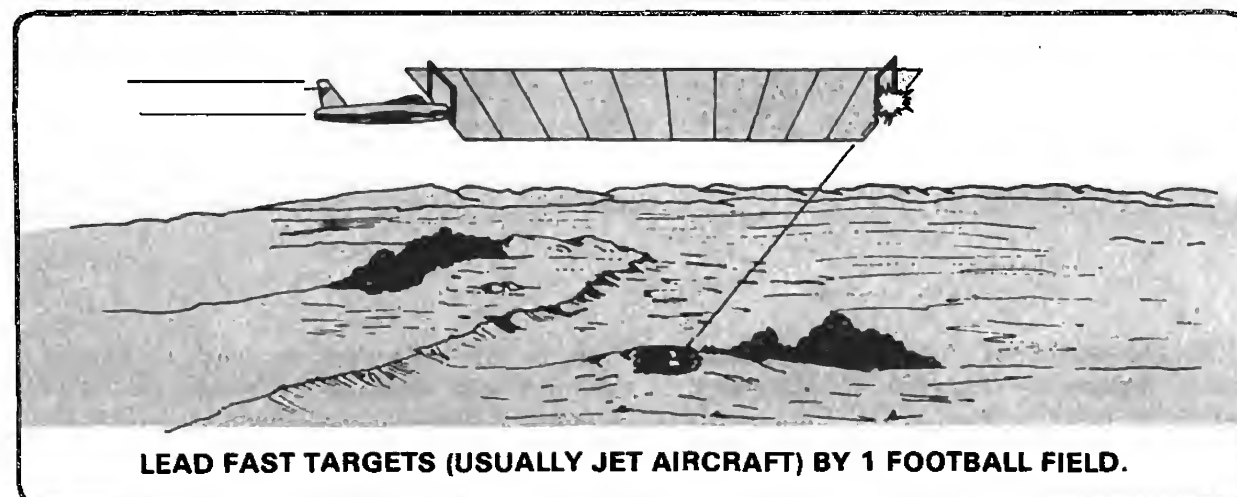
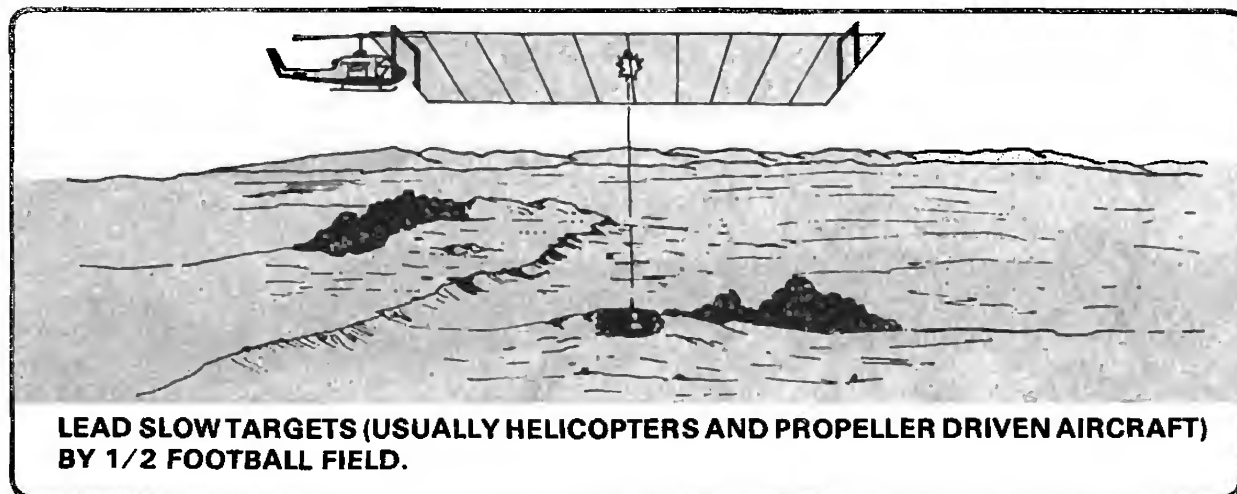
Engagement of Aircraft by Small Arms Weapons Organic to Cavalry Units. A large volume of fire from small arms weapons can destroy both high- and low-speed aircraft or disrupt their attack. The

volume fire technique is used to engage aircraft with small arms. A high volume of sustained fire is massed ahead of an aircraft. The intention is to destroy the aircraft when it flies into the fire.

When an enemy is flying directly toward you, fire as fast as possible and slightly above the nose of the aircraft.

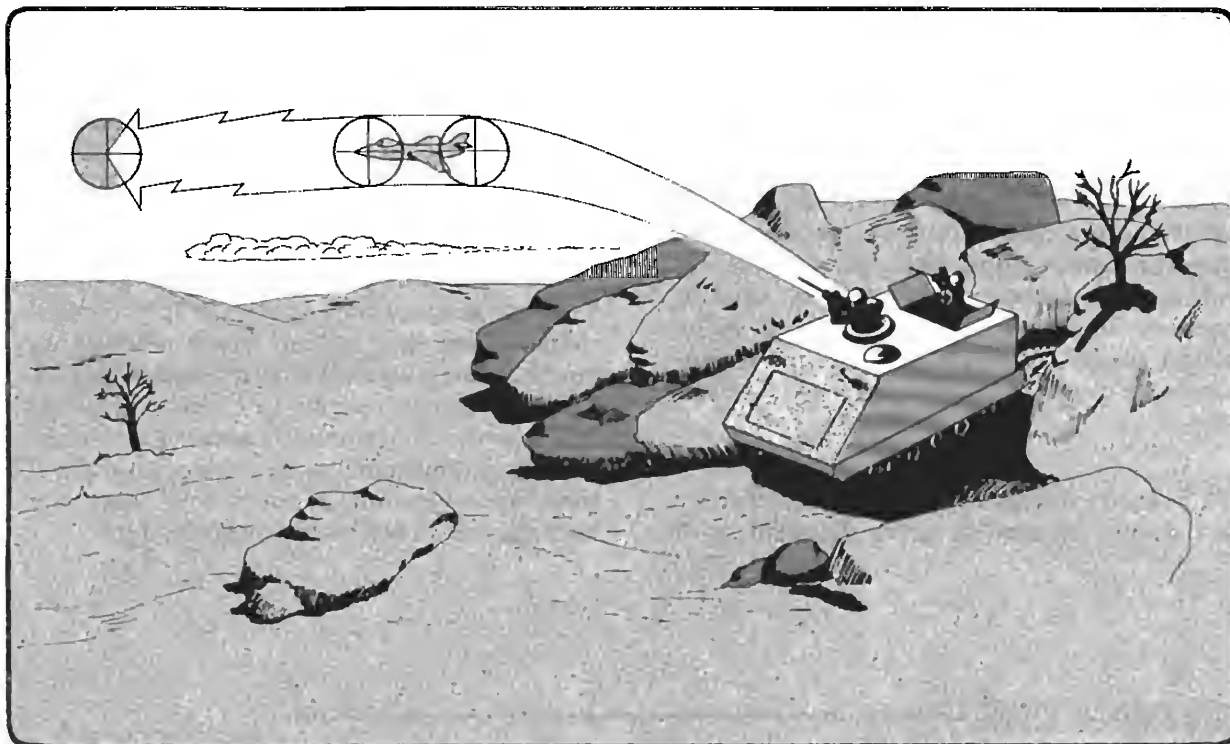


A lead angle is required for aircraft flying crossing and overhead courses. The amount of lead required depends on aircraft speed.



Automatic weapons can use an alternate technique called the sweep-through method. The gunner starts tracking to the rear of the hostile aircraft, sweeps through the aircraft,

begins firing as he sweeps through or a little later, and continues firing until target is destroyed.



Engagement of Aircraft by ADA Weapons Organic to Cavalry Units. A regimental headquarters and air and armored cavalry squadrons have an air defense artillery section armed with shoulder-fired air defense weapons to provide fair weather, low-altitude air defense. The ADA section is used in one of two roles:

- ***Redeye in Support of Tactical Operations.*** Redeye teams should be positioned well forward with maneuver units in order to achieve early engagement. Team capabilities are overlapped when possible to prevent gaps in defense. When defending a critical asset within a squadron's area of operation, the teams should be positioned out from the assets, in

accordance with ground security.

- ***ADA in March Column Defense.*** March column defense is air defense protection given a displacing cavalry unit. ADA teams should be to the front and rear to dominate along the axis of the column. If enough teams are available, teams should also be placed to the flank for added security. Air defense artillery weapons of a regiment, of air and armored cavalry squadrons, or organic to the headquarters and headquarters troop have a 13-meter backblast and a distinct firing signature. A team, should immediately displace 300-500m after firing.

Augmentation of a Regiment or Cavalry Squadron Air Defense Capability. The air defense capability of a regiment or divisional squadron may be reinforced by corps or divisional ADA battalions. Cavalry units may also receive additional air defense coverage from air defense units operating in the general area.

When corps or divisional ADA units are attached to or under operational control of cavalry, the ADA commander is the air defense coordinator for the regiment or squadron and plans the air defense. A regiment or squadron commander usually specifies the relationship of their ADA section leader to the supporting ADA commander. For additional information, see FM 44-1.

Vulcan systems operating with a cavalry unit should be used in pairs. Regardless of

where they are used by the cavalry unit, they still remain subject to the restrictions imposed by the air defense rules of engagement. Vulcan systems providing air defense for a moving force should position far enough forward so that two-thirds of their effective range extends beyond the lead elements. Vulcan systems should also position with the trail element of the unit. If the supported regiment or squadron is moving in column, Vulcans should be interspersed in the column. As in the case of air defense weapons organic to regiment and squadrons, Vulcans should position to the flanks. In general, Vulcans supporting cavalry supply combat element defense, critical asset defense, or march column defense as discussed on page 7-11. Vulcans can operate in a ground support role; however, it is usually better for them to save their ammunition to engage aircraft. If used in a ground support role, they are normally attached to the supported unit.

ENGINEERS ---

A combat engineer company is organic to the regiment. The company commander also serves as the cavalry regiment engineer and provides special expertise in engineer operations. A regiment is frequently provided additional engineer support from divisional or corps engineer units. The commander of the attached engineer company supervises attached engineer troops and develops task priorities for direct support troops. Engineer combat services include:

- Constructing, repairing, and maintaining roads, bridges, fords, and culverts.

- Providing support and coordinating engineer activities for river crossing operations with boats, rafts, and bridges and preparing deep fording or vehicle swim sites.
- Providing fixed bridging for passage of short gaps.
- Helping remove obstacles, including mines.
- Preparing and executing demolitions, including nuclear demolitions (ADM).

- Providing technical assistance for preparation of field fortifications, camouflage, and deception devices.
- Performing engineer reconnaissance and intelligence missions.
- Accomplishing general construction, including construction of landing areas.
- Producing potable water.
- Helping assault fortified positions.

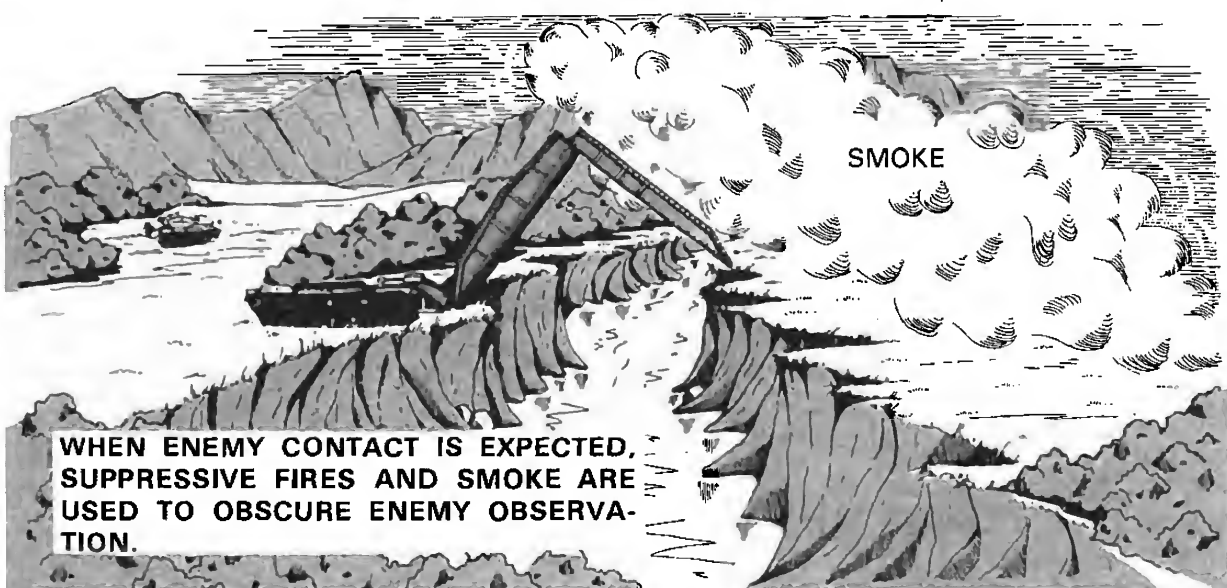
USE OF ENGINEERS WITH CAVALRY

Engineer units supporting cavalry are usually assigned a direct support mission. Units may be attached when distance, terrain, or mission makes operations under control of the parent unit impractical.

An engineer platoon often directly supports a troop conducting reconnaissance to collect technical data about routes, obstacles, streams, bridges, fords, etc. If the reconnaissance precedes the movement of a main body, a squadron may retain control of the engineers, and assign priorities of work to gain maximum freedom of action.

Armored Vehicle Launched Bridge (AVLB). A regimental squadron AVLB

section contains three armored vehicle bridge launchers, each with a class 60 scissor-type bridge. The bridge is capable of spanning a 60-foot gap. A divisional squadron is provided AVLB support from the divisional engineer battalion. The AVLB section may supply general support to the squadron or attach one or more AVLB's to a troop. AVLB's are used to span streams, antitank ditches, craters, canals, partially blown bridges and similar obstacles. The AVLB has no firepower and, therefore, must be overwatched and protected by tanks, light armor, or infantry. Suppressive fires and smoke to obscure enemy observation should be used as during any other operation.



During reconnaissance and security operations, AVLB's are kept forward to prevent unnecessary delay. They usually move forward of the combat trains of the tactical elements.

When needed, an AVLB moves while being overwatched by the supported element and emplaces its span. If the unit is in contact with the enemy or if contact is expected, suppressive fires and smoke are used to obscure enemy observation. Suppressive fire and smoke should seal off more than one area. This makes it more difficult for the enemy to mass his suppressive fires. Combat elements cross as rapidly as possible.

When the force has crossed, and in the absence of orders to leave the bridge in place, the bridge is recovered. A cavalry regiment or squadron ordered to leave a bridge in place coordinates with supporting engineers to acquire a replacement.

Combat Engineer Vehicle (CEV). A CEV is a main battle tank modified to provide a dozing, winching, lifting, and demolition gun (165-mm) capability for combat engineers. There are two CEV's in an engineer company supporting a regiment and in each combat engineer company of combat engineer battalions organic to armored and

mechanized infantry divisions. There is one CEV in each combat engineer company of the combat engineer battalion organic to infantry divisions. A CEV provides a protected means of accomplishing engineer pioneer tasks when in contact with the enemy. CEV's must be overwatched and protected by tanks, light armor, and infantry. Suppressive fires and smoke are used to obscure enemy observation. Appropriate tasks for a CEV are:

- Destroying or constructing road blocks.
- Filling craters and antitank ditches.
- Placing fixed span assault bridging.
- Preparing an abutment on the near bank for an AVLB.
- Improving approaches and entry and exit points for fording and amphibious vehicles.
- Improving roads and trails, as required, to facilitate forward movement of combat elements.
- Destroying strongpoints during the assault of fortified or built-up areas.
- Constructing hasty gun emplacements.
- Helping dig tank emplacements.

GROUND SURVEILLANCE RADARS AND REMOTELY EMPLOYED SENSORS (REMS)

GROUND SURVEILLANCE RADARS

Employment of Ground Surveillance Radar Sections. Ground surveillance

radar sections of cavalry units are usually used by teams to:

- Search avenues of approach and areas on a time schedule, randomly or continuously to detect location, size, composition, and nature of enemy activity.
- Monitor point targets, such as bridges or road junctions, to detect number, type, and direction of movement of targets through the point.
- Search and monitor ambush areas or other locations.
- Search areas of nuclear and conventional fires for signs of enemy activity immediately after firing. This aids post-strike analysis.
- Survey distant points or areas of special interest.
- Detect targets through haze, fog, smoke, and at night.
- Help orient units during limited visibility operations.
- Increase effectiveness of fire support by detecting and providing target locations.
- Determine the speed of a target. The radar unit plots the target location at two known points and computes the movement time between the points.

Selection of Ground Surveillance Radar Sites. Radar sites may be selected by the section or team leader. Frequently, they are located with an OP or a team of an armored cavalry platoon. A radar team must be capable of rapid displacement to avoid suppressive fires. In general, the criteria for an OP site applies to a ground surveillance radar site. A radar's field of view should be relatively free of close ground clutter, such as trees, bushes, or buildings. Such objects tend to distort the radar signal, resulting in inaccurate range, azimuth, and elevation data. The enemy can detect radar signals. The result of detection is usually suppressive fires. It is best to periodically search an area and, in the absence of target detection, turn off the radar.

REMOTELY EMPLOYED SENSORS (REMS)

From time to time, especially during defense operations, divisional or corps REMS teams are attached to or placed in direct support of cavalry units. When attached to or placed in direct support of a cavalry unit, the S2, based on the commander's guidance, designates the area of surveillance to be covered. He integrates REMS coverage with

other surveillance means to cover gaps, flanks, or avenues of approach into the unit's area. A REMS team uses sensors where they can best cover the assigned area and then locates with the operation and intelligence center. There the REMS team monitors the sensors and passes the information to the S2 and higher headquarters.

INTELLIGENCE

Intelligence is an essential prerequisite for cavalry operations, which in turn help provide information for the production of intelligence. A military intelligence detachment is usually provided to a regiment. It provides order-of-battle specialists and imagery interpretation, interrogation, and counterintelligence personnel. Similar support to a divisional air or armored cavalry squadron is provided by the divisional military intelligence company; however, military intelligence personnel are usually retained under divisional control. Interrogation and counterintelligence personnel can be used at troop level for short periods. An Army security agency (ASA) support platoon is usually attached or placed in direct support of a regiment to help maintain communications security (FM 32-10). Similar support is provided a divisional squadron by the ASA company attached to division (wartime augmentation). ASA elements are frequently located with a squadron, but they are not attached to or placed under the OPCON of a squadron. In this case, a squadron must

provide security and logistical support. Military intelligence support for a separate air cavalry squadron is determined by the squadron's mission requirements. Organic aerial reconnaissance and surveillance capabilities of air cavalry can be supplemented by Army aviation units specifically equipped to provide photographic (day and night), infrared, and radar support. The tactical Air Force also provides photographic and electronic support, weather information, and information gained from aerial observation.

Combat intelligence is intelligence used in a combat area. It is based upon information collected locally or provided by higher headquarters. A cavalry unit uses the three elements of combat intelligence—information concerning terrain, weather, and the enemy—to plan and conduct combat operations. The collection and analysis of combat information is a continuing requirement (FM 30-5).

ARMY AVIATION, MILITARY POLICE, PSYCHOLOGICAL WARFARE, AND CIVIL AFFAIRS

ARMY AVIATION

Army aviation is integrated into combat, combat support, and combat service support to improve operations. Cavalry regiments and squadrons have helicopters for com-

mand, control, and liaison. A regiment has an aviation platoon (page 3-6). A regimental armored cavalry squadron has an aviation section (page 3-8). Each air cavalry squadron

also has an aviation platoon. (page 3-15). Army aviation units may be attached to, in support of, or under the OPCON of a cavalry regiment or squadron. Cavalry units are often supported by:

- Assault and assault support helicopter companies for troop and cargo lifts.
- Heavy helicopter companies for heavy equipment and cargo lifts.
- Fixed-wing surveillance companies for visual, photographic, and electronic surveillance.
- Air ambulance companies for casualty evaluation.
- ★ ■ Command and control elements of the regiment.
- ★ Command console helicopters, assigned to air combat support troops and divisional combat aviation companies, can provide highly mobile command posts that can be moved about the battlefield transporting command groups, alternate command groups, or radio relay teams.

For a detailed discussion of Army aviation, see FM 1-5, FM 1-15, and FM 90-1.

MILITARY POLICE (MP)

An armored cavalry regiment normally has an MP platoon attached from COSCOM. The platoon is usually retained under regimental control to:

- Provide internal security for the regimental CP and/or trains.
- Operate traffic control points.
- Help guard, process, and evacuate PW's.

Cavalry units below regimental level are provided MP support on an as-needed basis. See FM 19-20 for more information concerning MP operations.

PSYCHOLOGICAL WARFARE (PSYWAR)

PSYWAR includes the planned use of propaganda and other measures to influence the opinions, emotions, attitudes, and behavior of enemy, neutral, or friendly groups. PSYWAR units assigned to a theater or corps provide functional teams to divisions and armored cavalry regiments on an attached or supporting basis. These teams engage in propaganda operations to:

- Depress enemy morale.
- Diminish enemy combat effectiveness.
- Encourage defections.
- Stabilize civilians and prevent interference with combat operations.

PSYWAR support provided cavalry units normally involves loudspeaker broadcasts and leaflet drops directed toward:

- Isolated enemy units.
- Individual enemy soldiers identified by PW's or defectors.
- Civilians to help in refugee control and other civil affairs operations.

See FM 33-1 for more information.

CIVIL AFFAIRS

Civil affairs support is given to the armored cavalry regiment by one or more functional teams from the COSCOM civil affairs battalion. In cavalry, civil affairs support for squadrons and lower units is provided on an as-needed basis. Civil affairs activities:

- Prevent civilian interference with military operations.
- Discharge a commander's legal obligations to the local civilians.
- Help maintain public order and safety.

See FM 41-10 for more information.

SUMMARY

Combat support for cavalry units is provided by mortars, artillery, USAF tactical fighter-bombers, and engineer, signal, military intelligence, Army aviation, military police, psychological warfare, and civil affairs units.

Usually, *mortars* fire immediate suppressive fires, including smoke, until artillery can be brought to bear. As soon as artillery can be brought to bear, the cavalry platoon mortar should cease fire to conserve ammunition.

Field *artillery* fire destroys or suppresses enemy elements which can fire on the unit. Field artillery can also destroy or make ineffective personnel, vehicles, and equipment in command control parties or facilities, logistics areas, and assembly areas.

The USAF *tactical fighter-bomber* is an excellent weapon system with which to attack a well-emplaced enemy. It can quickly destroy hard point targets, including tanks.

An *engineer* platoon is often placed in direct support of a troop conducting reconnaissance to collect technical data about routes, obstacles, streams, bridges, fords, etc.

Ground surveillance radars are used by cavalry units to search avenues of approach; monitor point targets and ambush areas; search fire areas after firing; detect targets through haze, fog, smoke, and darkness; and determine the speed of targets.

Remotely controlled sensors (REMS) coverage is usually integrated with other surveillance means to cover gaps, flanks, or avenues of approach.

Intelligence is an essential prerequisite for cavalry operations, which in turn help provide information for the production of intelligence. A cavalry regiment usually has order-of-battle specialists and imagery interpretation, interrogator, and counterintelligence personnel.

Army Aviation supports cavalry units by supplying:

- Assault and assault support helicopter companies for troop and cargo lifts.
- Heavy helicopter companies for heavy equipment and cargo lifts.
- Fixed-wing surveillance companies for visual, photographic, and electronic surveillance.
- Air ambulance companies for casualty evacuation.
- ★ ■ Command console helicopters for highly mobile command posts.

A *military police* platoon is usually retained under regimental control to provide internal security for the regimental CP and/or trains; control traffic; and help guard, process, and evacuate PW's.

Functional teams from *psychological warfare* units normally use loudspeaker broadcasts and leaflet drops to influence the opinions, emotions, attitudes, and behavior of enemy, neutral, and friendly groups.

Civil affairs support prevents civilian interference with military operations, discharges a commander's legal obligations to the local civilians, and helps maintain public order and safety.

COMBAT SERVICE SUPPORT

Combat service support for cavalry units primarily concerns supply, transportation, maintenance, and personnel, medical, and administrative services. Combat service support may involve:

- A service.
- An item.
- Technical assistance or advice.

The impetus of combat support is to the front; that is, combat service support is performed as far forward as the tactical situation permits. Supplies are delivered to front line units whenever possible. This method of resupply is called **unit distribution**. The other method is **supply point distribution**, a process in which the user must go to a distribution point and pick up supplies. Cavalry units obtain supplies through a combination of unit and supply point distribution. Sometimes, when critical items (major assemblies, ammunition, and fuel) are in short supply, corps units deliver those items directly to the squadrons.

Maintenance is performed at the lowest echelon capable of doing the job. Frequently, maintenance contact teams from divisional and corps maintenance units work with front line units to help cannibalize and repair disabled equipment in order to get equipment back into battle as quickly as possible.

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ORGANIC COMBAT SERVICE SUPPORT IN CAVALRY UNITS

All cavalry units, except platoons, have organic combat service support elements to provide for their immediate needs and interface with the combat service support chain. Combat service support elements usually organize into trains for combat. At regiment and squadron level, the S1 and S4 have primary staff responsibility for combat service support. The troop executive officer, or service platoon leader in an air cavalry troop is usually the combat service support coordinator for the troop. Platoon leaders and platoon sergeants are responsible for making the needs of their platoons known.

Regiment. There are only limited organic service support elements at regimental level. The regimental headquarters troop maintenance section performs organizational maintenance and recovery of only its own vehicles. The regimental communications platoon performs organizational maintenance only on signal equipment assigned to regimental headquarters troop. The regimental medical section operates the regimental aid station. It provides aidmen and aid evacuation teams to troop-size elements.

Armored Cavalry Squadron. Each armored cavalry squadron has certain elements concerned primarily with combat service support activities.

The support platoon's supply section receives and consolidates supply requests from organic troop-size units, prepares requisitions, and procures and issues supplies. The platoon's transportation section transports that part of the squadron basic load or class III and V not issued. It also transports all other supplies from distribution points for the squadron. A divisional armored cavalry squadron's support platoon also has a mess section which procures, prepares, and delivers rations and water.

The maintenance platoon provides backup organizational maintenance and recovery of ground vehicles for the squadron. It supplies repair parts for all equipment except medical, signal, and aircraft peculiar items.

The medical platoon establishes and operates the squadron aid station. It provides medical aid teams and ambulance service to troop-size units. It procures and distributes medical repair parts and supplies for the squadron. The platoon also helps teach first aid, field sanitation, and related subjects. It inspects the squadron's medical, dining, and sanitary facilities to ensure high standards.

The communications platoon performs organizational maintenance on signal equipment of the squadron headquarters troop. It provides backup organizational maintenance of signal equipment for the squadron. It procures and issues signal repair parts and supplies, and evacuates signal equipment not repairable within the squadron.

Air Cavalry Squadron. An air cavalry squadron's combat service support elements generally parallel those of an armored cavalry squadron except:

- An air cavalry squadron's support platoon's transportation section carries class III and V supplies for the ground cavalry troop and that part of the squadron's basic load of supplies not issued. Each air cavalry troop has class III and V vehicles. The ACCB air cavalry squadron's support platoon does not have a transportation section. This air cavalry squadron's transportation requirements are met by using organic aircraft and ground/air transportation provided by the ACCB support battalion.

- The aviation unit maintenance (AVUM) platoon organic to each air cavalry squadron provides maintenance for squadron aircraft. It has a limited recovery and evacuation capability for ground vehicles. All organizational maintenance for ground vehicles is performed by the aviation unit maintenance platoon, air cavalry troop service platoons, and maintenance section organic to the ground troop.

Armored Cavalry and Cavalry Troops and Regimental Armored Cavalry Squadron's Tank Company and Howitzer Battery. At troop/company or battery level, the basic load of class I, III, V, and IX supplies carried is an essential part of organic combat service support.

Each ground troop and regimental armored cavalry squadron's tank company and howitzer battery has administrative, supply, communication, and maintenance elements. The supply elements are primarily concerned with requisitioning, receiving, and distributing class II, IV, and VII supplies. The communication and maintenance elements provide organizational maintenance support for their parent unit and combat service support interface with counterpart elements at squadron level. Each unit maintenance section, with exception of the howitzer battery, has a tracked recovery vehicle (TRV). The regimental armored cavalry squadron's

howitzer battery depends on TRV support from the squadron maintenance section.

Air Cavalry Troop. An air cavalry troop has the usual company level headquarters elements for administration. Otherwise, the service platoon is the focal point for most combat service support in the troop.

The service platoon's maintenance section performs organizational maintenance on troop aircraft, vehicles, weapons, and signal equipment. Light observation helicopters can be recovered by the platoon with utility aircraft. Ground vehicles beyond the troop's capability to repair are repaired onsite by a supporting contact team or evacuated by the troop to a maintenance collection point or directly to the supporting maintenance unit. The aviation intermediate maintenance (AVIM) company is responsible for evacuating aircraft beyond the repair capability of the troop.

The service platoon's supply section carries the troop's basic load of class III and V supplies not issued, and it establishes FARRP's. It also requests, receives, and distributes class II, IV, and VII supplies.

Armored Cavalry, Cavalry, or Air Cavalry Platoon. All personnel in an armored cavalry, cavalry, or air cavalry platoon are dedicated to combat. The platoon's basic load of rations, POL, ammunition, and spare parts comprises the organic service support.

NONORGANIC COMBAT SERVICE SUPPORT PROVIDED A CAVALRY UNIT

Nonorganic combat service support for a regiment is provided by a corps support command (COSCOM). Nonorganic combat service support for a divisional squadron is provided by the DISCOM. Nonorganic combat service support for a separate air cavalry squadron may be provided by either COS-

COM or DISCOM. Determining factors are the squadron's mission and its duration. The ACCB air cavalry squadron is given nonorganic combat service support, including aerial recovery of disabled Army aircraft by the ACCB support battalion.

COMBAT SERVICE SUPPORT CONSIDERATIONS

The Army logistics system is based upon principles contained in AR 11-8. Of primary interest to cavalry units are the principles of command, impetus to the front, maintaining reserves, and planning.

Command. Each cavalry commander and leader is responsible for ensuring adequate and timely combat service support for his organic and attached elements. Commanders and leaders do this by anticipating requirements, making their needs known, and supervising the use of available combat service support.

Impetus to the Front. Combat service support is provided as far forward as the tactical situation permits. At times, ammunition and other supplies for an armored cavalry platoon must be carried forward in an armored personnel carrier.

Maintaining Reserves. Reserve supplies are frequently carried by cavalry units to facilitate sustained, widely dispersed operations. These reserves may be extra

rations, ammunition, and spare parts carried on individual vehicles. Class IV and V supplies may be pre-positioned for defense. During reconnaissance and fast-moving operations, additional class III and V vehicles are frequently placed with each squadron/troop/company/battery.

Planning and Coordination. A combat service support plan is based on the tactical operation. It should be simple, complete, flexible, and coordinated with the tactical plan.

Planning and coordinating steps are:

- (1) Identify combat service support requirements.
- (2) Allocate available combat service support. Make maximum use of available combat service support before requesting additional support.
- (3) Obtain and allocate additional support as required.
- (4) Supervise.

GROUND AND AIR CAVALRY TRAINS

TRAINS

Organization, Functions, and General Considerations. Cavalry units, from regiment through troop/ company/ battery, normally use unit trains; that is, all organic and supporting combat service support elements are under control of the unit. Trains may be with the supported tactical unit or some distance to the rear. They may be echeloned into combat and field trains. Combat trains provide the combat service support required for immediate response to the needs of tactical elements. Field trains are located rearward to prevent interference with the tactical operation. Field trains, displacing independently of the supported tactical unit, receive security through passive measures.

Echelonment is usually desirable with cavalry because of the frequent necessity to gain and remain in contact with the enemy. At troop level, for example, the supply truck and maintenance truck may follow one or two terrain features behind the troop. Echelonment reduces the number of combat service support elements representing a soft target in a close combat environment. Trains can be consolidated to provide prompt and responsive combat service support of all types from a single point. Units must be ready to echelon or consolidate trains as the tactical situation changes. Echelonment of trains within a divisional armored cavalry squadron and its parent division is depicted on page 8-10.

The mission and tactical situation are the deciding factors which determine *if* and *how* to echelon trains. If enemy contact is light, then ammunition consumption and vehicle loss due to enemy action are relatively low. However, the use of fuel and lubricants is usually high; therefore, a larger number of

class III vehicles are kept forward. Contact with strong enemy forces normally results in greater ammunition consumption. The use of fuel and lubricants is low compared to ammunition, so it is necessary to pay more attention to the supply and transportation of class V.

General Considerations for Choosing Trains Areas. The location must:

- Minimize the vulnerability of combat service support units to *direct* fire. Locate in hull-down positions whenever possible and avoid landmark locations.
- Not block a road or defile, or use areas required by maneuver reserves, artillery units, engineers, or other combat support units.
- Have adequate room for dispersion.
- Have helicopter landing areas, particularly for the evacuation of casualties.
- Be on firm ground.
- Conceal from ground and aerial observation.
- Be beyond the range of enemy light artillery.

Organization for Combat of Combat Service Support with Group and Air Cavalry. *The regiment uses unit trains consisting of corps support command (COSCOM) units and those elements of the regimental headquarters and headquarters troop not with the operations and intelligence center. The air cavalry troop trains, and field trains of subordinate or attached units, may be located with the regimental trains. The regimental S4 establishes and maintains a regimental logistics control point (RLCP) in the regimental trains area near the center of movement. The RLCP is:*

- The regimental combat service support operations center.
- Responsible for coordinating the security of the trains area.
- The planning center for area damage control operations.

The S4 must ensure trains displacement is coordinated with the regimental S3 and supporting COSCOM units. Planning is vital; COSCOM units require more reaction time than cavalry because they are not as mobile and require longer set up and take down times.

The technique of displacing the regimental trains area varies with each tactical situation. Displacement may be done by:

- Moving parts of each unit to the new location. Elements displaced first must have sufficient supplies, equipment, and transportation to provide their particular service until the rest of the train closes.
- Designating a squadron trains area as a regimental trains area while the regimental trains displace. This technique involves movement of some units and supplies to the designated squadron trains area to provide support normally found in regimental trains.

- Displacing all the regimental trains' elements simultaneously. This technique is fastest, but it does not permit continuous support.

The regimental air cavalry troop uses unit trains. Contact teams are formed and used as required.

Troop trains usually consist of:

- ★ ■ The service platoon, less personnel and equipment used to establish the forward arming and refueling point (FARP).
- DS aircraft maintenance elements.
- The medical aid and evacuation team, less personnel with other elements of the troop.

Troop trains normally controlled by the service platoon leader may be located:

- With regimental trains.
- At the operational base for regimental aircraft.
- At the COSCOM aircraft maintenance base.
- At the corps airfield.
- With a designated squadron.

★ The air cavalry troop establishes a mobile FARP as required to support its tactical operations. The troop establishes and operates only one FARP primarily because of limited personnel; however, under emergency conditions, it can establish and operate two FARPs for a limited period. A FARP consists of:

- Aircraft fuel and pumping equipment.
- Ammunition for aircraft weapons.
- Personnel to operate the FARP.
- Medical aidmen, aircraft mechanics, and armament repairmen, as required.

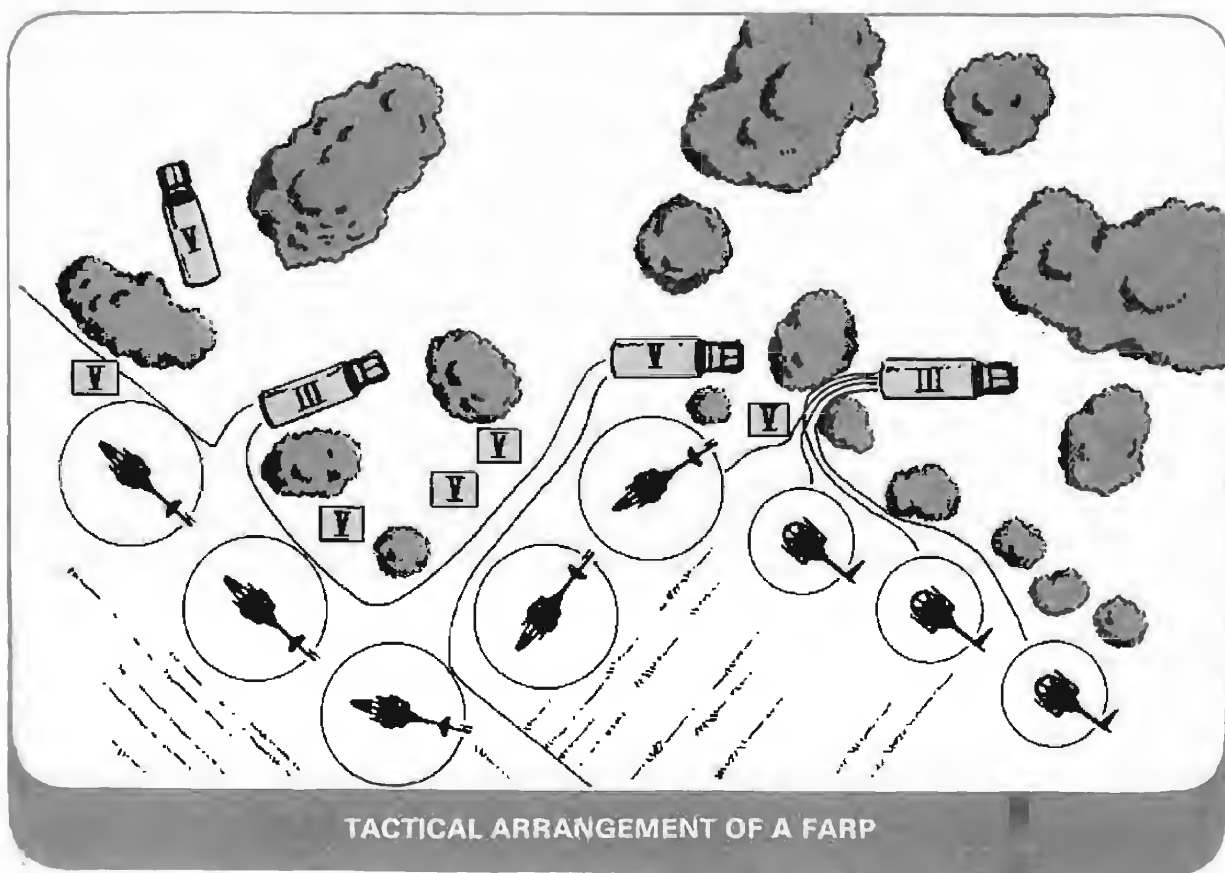
The forward arming and refueling point (FARP) provides fuel and ammunition necessary for the employment of air cavalry maneuver units in combat. FARP's are designed to increase responsiveness and decrease turn around time of maneuvering air cavalry teams.

Specifically, the FARP will permit at least a team of attack and scout helicopters to rapidly rearm and refuel at the same time. This permits the unit to bring maximum pressure to bear on the enemy by reducing turn around time and optimizing available firepower through increased time on station.

FARP's are normally temporary facilities, transitory in nature, and established for a specific duration and mission. These mobile FARP's are moved about the battlefield primarily for two reasons: to keep up with the flow of the battle and to prevent enemy targeting with indirect fire or tactical air sorties. Therefore, FARP's are not normally operated in the same location longer than 3 to 6 hours.

In tactical operations (offense, defense, and retrograde), the air cavalry commander positions FARP's based on the:

- Distance to and the stability of the forward edge of the battle area (FEBA).
- Required time-on-station.
- Security requirements for the FARP.
- Enemy ability to destroy the FARP with indirect fire.
- Availability of adequate road networks.
- Distance between the FARP and the nearest class III and V supply points.
- Command and control requirements.
- Proximity to the main supply route (MSR).
- Coordination with the logistical effort.



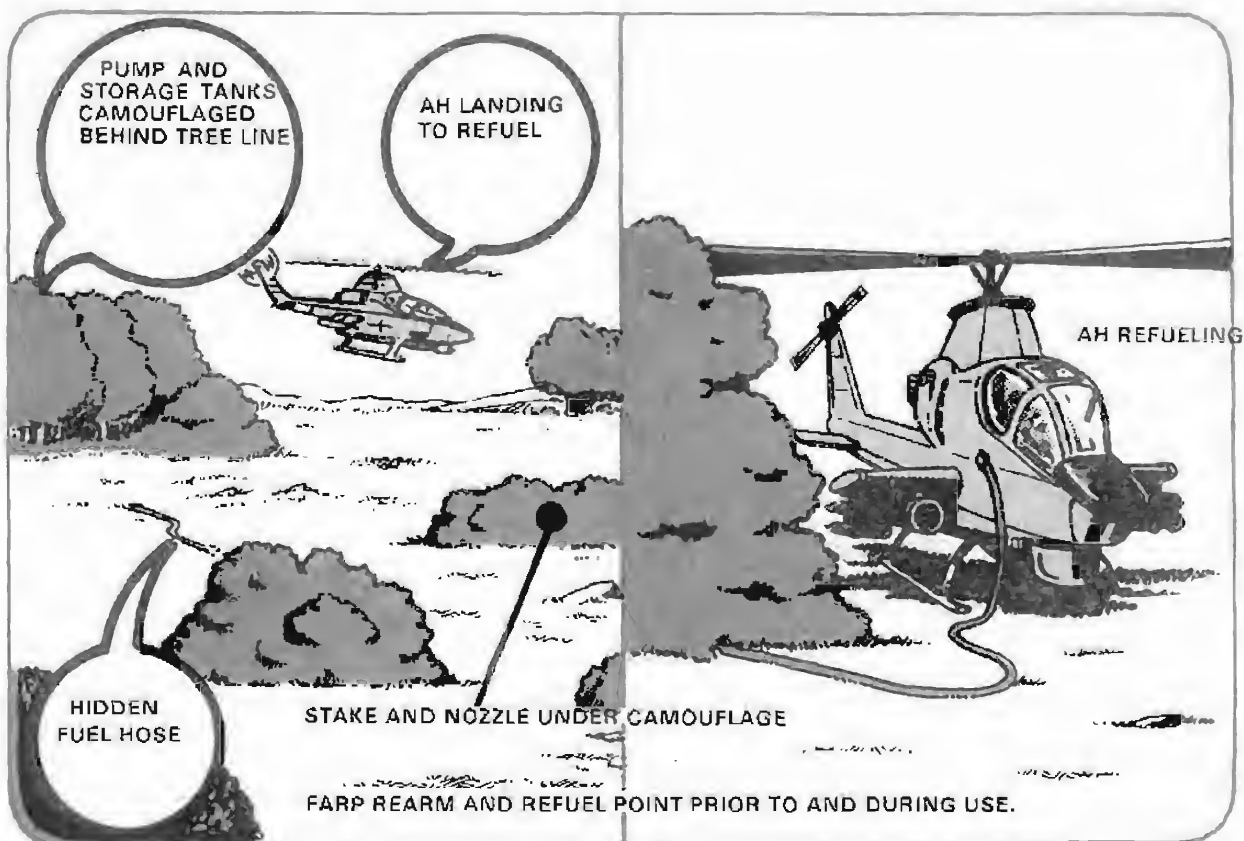
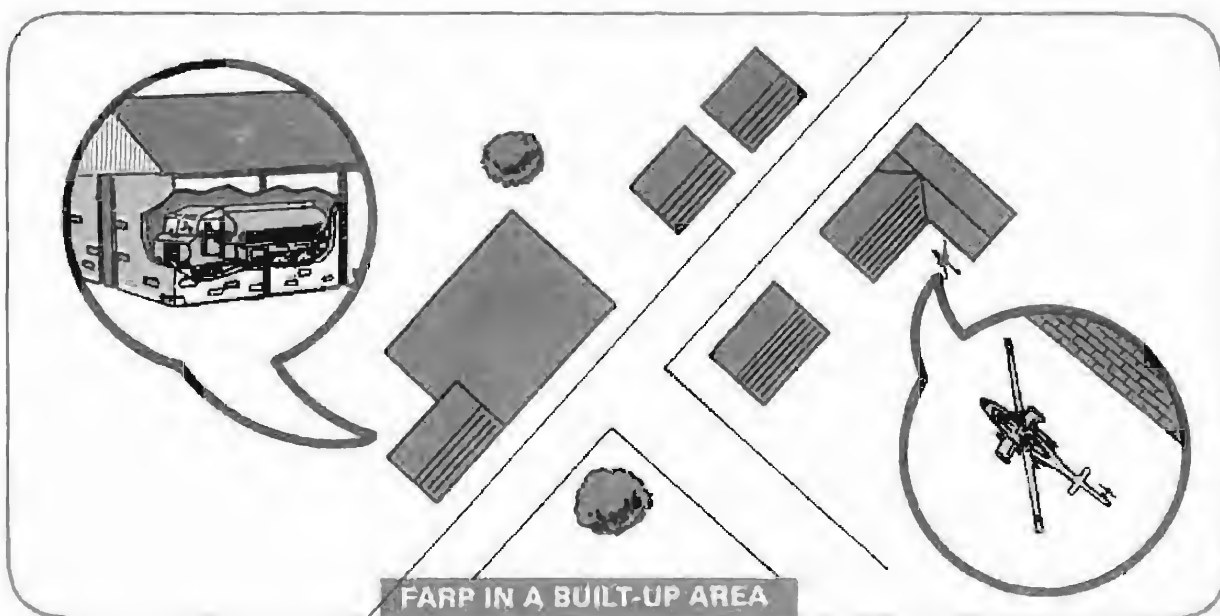
FARP's are usually established in or near forward assembly areas. Locations and routes to and from FARP's should be masked from radar detection.

Enemy radar should be assumed to be on any high ground or prominent terrain occupied by enemy forces. A line-of-sight analysis is made to determine the FARP mask. Then three or four points with routes leading to the FARP and masked from radar detection are established and used by aircraft going to the FARP. As teams return from missions to the FARP, they fly to one of these known masked points and then fly masked from radar detection to the FARP. Upon leaving the FARP, the teams return NOE to a masked point and then, if required, move with high speed to resume their assigned missions. By using such passive security

measures the teams avoid having the FARP directly detected by radar.

Because of the volume of aircraft traffic and their importance to AH operations, FARPs should also be kept beyond medium artillery range. When located further forward, they must be displaced often to minimize this threat.

The site of a FARP must not only be masked from possible radar detection, but must have sufficient space to service helicopters as they rearm and refuel. All platoons of a company can be committed simultaneously and can arrive on station quickly. The diagram above shows one way in which a FARP may be organized to keep aero-weapons and their respective aero-scouts together.



- Ammunition for aircraft weapons.
- Personnel to operate the FARRP.
- Medical aidmen, aircraft mechanics, and armament repairmen, as required.

A *regimental armored cavalry squadron* normally has consolidated unit trains known as squadron trains. The squadron S1 and S4 establish an admin/log center in the trains area for combat service support control and coordination. The S4 is responsible for control and movement of the trains.

The normal composition of squadron trains includes:

- Elements of S1 and S4 sections not with the squadron operations and intelligence center.
- Maintenance platoon.
- Support platoon.
- Medical platoon (except aid and evacuation teams attached to troops/ companies/batteries).
- Headquarters and headquarters troop maintenance (except elements with the squadron operations and intelligence center).
- Radio repairmen from the communications platoon.
- Armored cavalry troop and tank company supply sections.
- Troop and company mess teams. (Howitzer battery mess teams normally locate with their batteries.)

Grouping combat service support elements into squadron trains provides a single focal point and eases local security and command and control. Dispersion is important, but it must be limited enough that all elements contribute to the security of the area.

General guidelines for organizing the squadron trains area are:

- The S1/4 admin/log center should locate near the side closest to combat units to aid coordination.
- The squadron aid station should be near the side closest to combat units to help in patient evacuation and treatment.
- Administrative elements of the headquarters troop should locate near the admin/log center. Similarly, headquarters troop maintenance elements should be near the squadron maintenance platoon for ease of coordination.
- Class III and V points should be established along the supply route by the support platoon to facilitate re-supply.
- Mess teams should locate away from the supply route to keep dust from interfering with any food preparation.
- Guideposts and signs should be used at entrances and within the trains area to reduce unnecessary movement.
- Vehicles and other elements in trains should be under cover and concealed by camouflage.

The *regimental squadron's armored cavalry troops* normally organize combat and field trains. The combat trains, normally controlled by the troop executive officer or first sergeant, move and locate near the troop CP. Troop field trains locate and move with the squadron trains.

Combat trains contain:

- Troop maintenance section.

- Medical aid and evacuation team.

NOTE: During fast-moving situations, troop combat trains may contain ammunition and POL vehicles from the squadron support platoon.

Field trains contain:

- Troop mess team.
- Troop supply section.

The regimental armored cavalry squadron howitzer battery consolidates its trains. They usually stay with the battery.

The regimental armored cavalry tank company usually uses combat and field trains organized as in an armored cavalry troop.

The division armored cavalry squadron organization and use of trains is generally the same as for the regimental armored cavalry squadron. The differences are:

- The divisional squadron normally obtains support from the nearest brigade or the division support command (DISCOM).
- Air cavalry troop trains may be located:

- ★ ● At the maintenance base for division aircraft.
- With the troop CP.

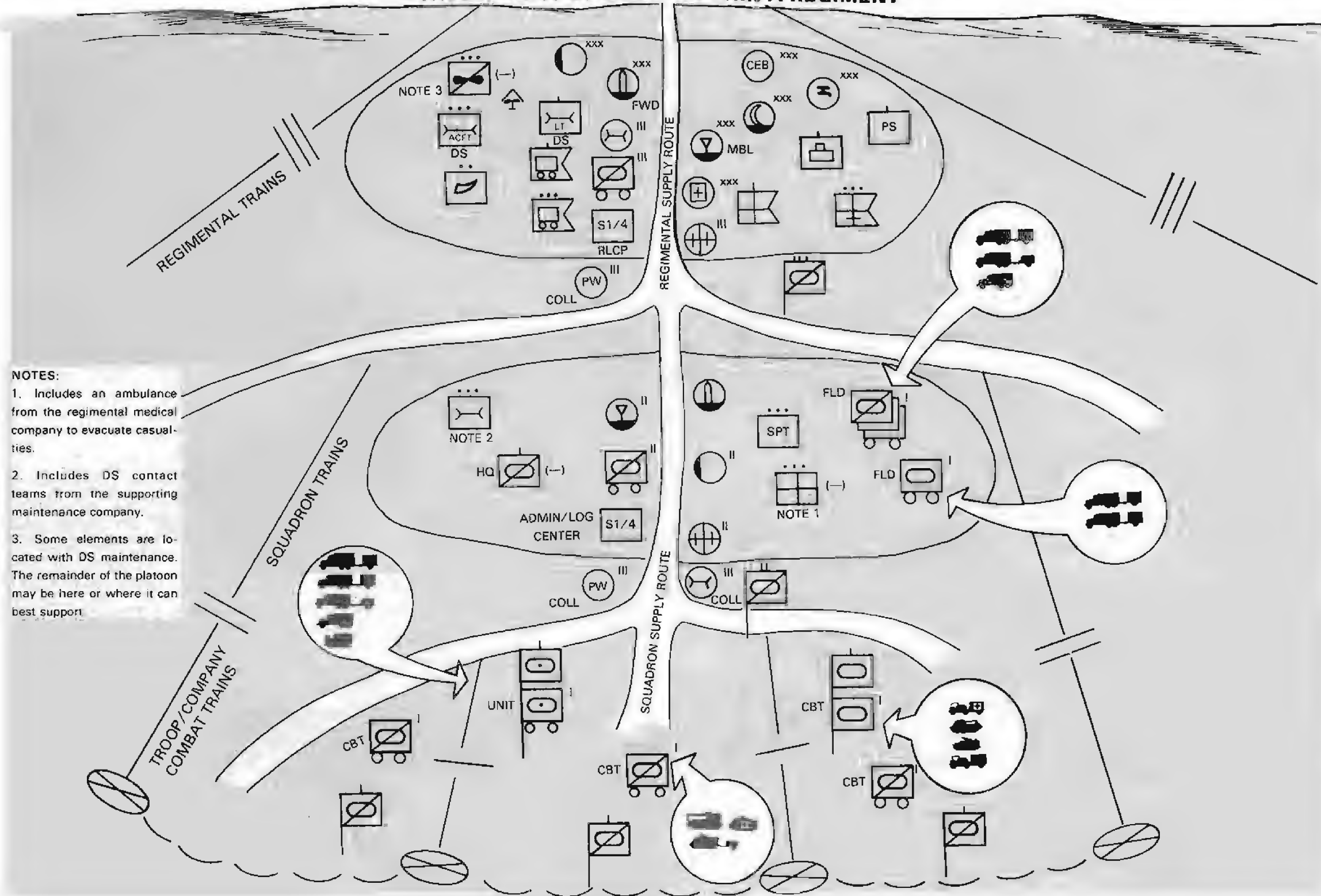
The air cavalry squadron normally consolidates its trains. Air cavalry unit trains are controlled by the squadron S4 and normally locate where the majority of the aircraft are based. Normally composition of the air cavalry squadron trains includes:

- Support platoon.
- Aircraft maintenance platoon.
- Transportation section.
- Elements of the medical platoon.
- Maintenance and support elements of the aviation platoon.

Air cavalry troops in an air cavalry squadron use trains in generally the same manner as ground cavalry troops. The difference is troop trains in an air cavalry squadron may locate:

- ★ ■ With the squadron trains.
- At the division or higher headquarters airfield or aircraft maintenance bases.

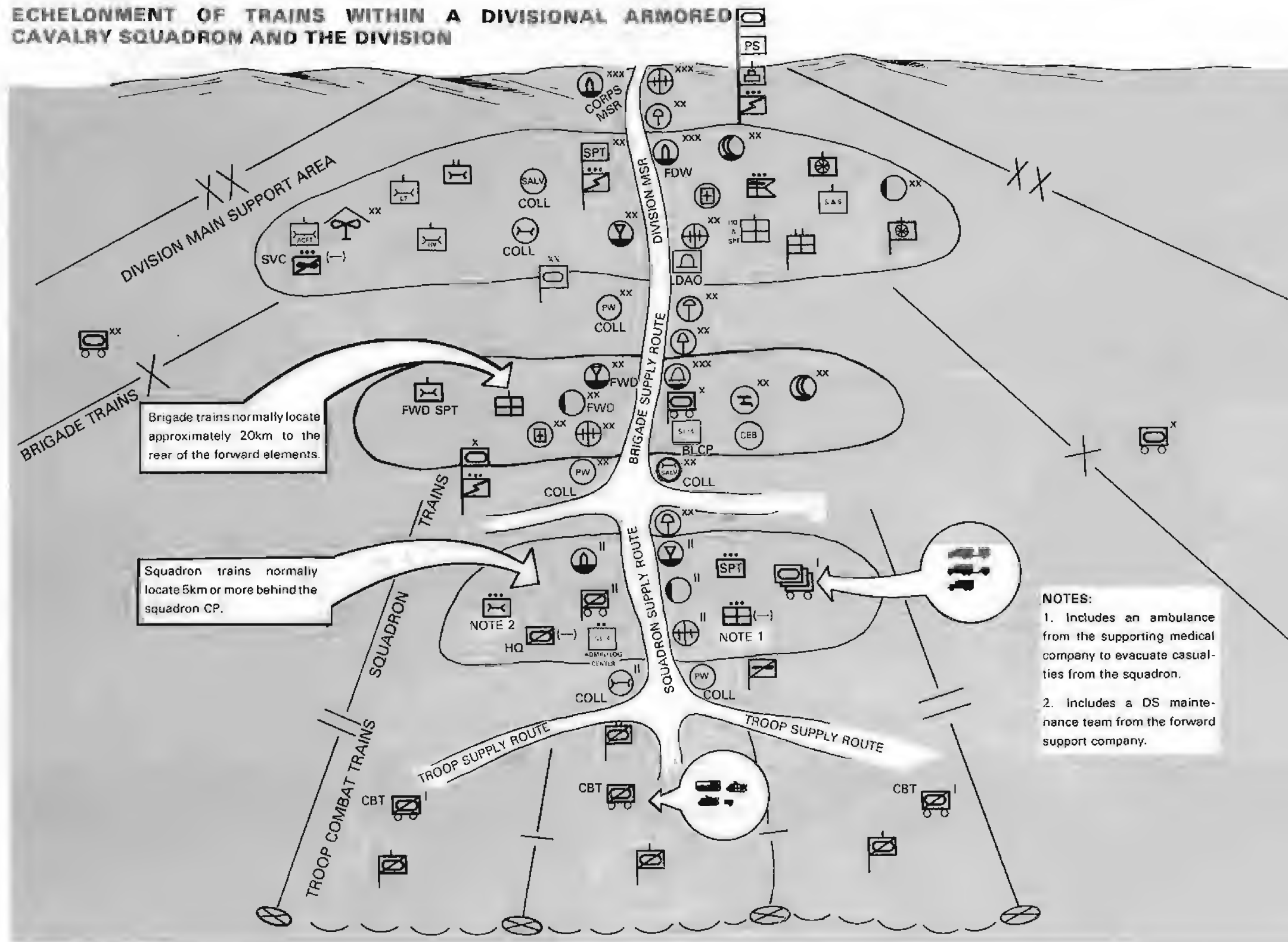
ECHELONMENT OF TRAINS WITHIN A REGIMENT



NOTES:

1. Includes an ambulance from the regimental medical company to evacuate casualties.
2. Includes DS contact teams from the supporting maintenance company.
3. Some elements are located with DS maintenance. The remainder of the platoon may be here or where it can best support.

ECHOLONMENT OF TRAINS WITHIN A DIVISIONAL ARMORED CAVALRY SQUADRON AND THE DIVISION



- NOTES:**
1. Includes an ambulance from the supporting medical company to evacuate casualties from the squadron.
 2. Includes a DS maintenance team from the forward support company.

SUPPLY

The supply system requisitions, distributes, and stores supplies. Resupply is accomplished by the supply point method, unit distribution method, or a combination of both.

When the *supply point method* is used, units obtain their supplies at a designated supply or distribution point.

When the *unit distribution method* is used, the supporting combat service support unit delivers supplies directly to the using unit. The unit distribution method is frequently used for fast-moving supplies.

Supplies are grouped into 10 major classes:

Class I—Rations and PX Gratuitous Supplies. Combat rations for the feeding of personnel assigned to each vehicle are carried aboard the vehicle. Normal practice is to carry 3-5 days of rations. Crews and other personnel eat when time permits. This is called *crew feeding*. *Unit feeding* is when fresh rations, prepared by the mess section, are distributed to entire units. Basis of issue for class I supplies may be the daily ration request, personnel daily summary, or informal strength accountability reports. Normally, unit needs are determined and consolidated at squadron level by the squadron supply section and forwarded as follows:

- Regimental squadron and the needs of troop-size units not organic to squadron are sent to the regimental logistical control point (RLCP). The RLCP consolidates and forwards the regiment's class I needs to a COSCOM class I supply point.
- Divisional armored and air cavalry

squadron's class I needs are sent to the DISCOM supply and transport battalion.

- Air cavalry squadron (separate) class I needs are sent either to DISCOM or COSCOM.
- Air cavalry squadron (ACCB) class I needs are sent to the supply and transport company of the ACCB support battalion.

Class I is delivered by the supporting COSCOM unit to class I distribution points located in the regimental trains or a DISCOM area. Water is not a class I item, but it is frequently obtained with rations. Water is obtained by troop/company/battery on an as-needed basis. Units use organic transportation to draw water from the nearest water points.

Class II—Supplies and Equipment (Except Cryptographic) Prescribed by TOE, TDA (Clothing, Tool Sets, and Individual Equipment). Requests for class II supplies (except cryptographic) are consolidated and sent to the supporting supply unit. COMSEC logistics and equipment are requested and distributed through cryptographic channels. This is normally coordinated between unit crypto custodian and the crypto custodian at the next higher headquarters.

Class III—Fuels and Lubricants (POL). Requests for fuels and lubricants used in large quantities are based on periodic forecasts and/or demand. Fuel is obtained from the class III supply point designated by COSCOM (in the case of a regiment) or DISCOM (in the case of a divisional squadron). A separate air cavalry squadron obtains

fuel from a class III supply point designated by either COSCOM or DISCOM. In a regiment, class III requests are not usually forwarded through or consolidated by the RLCP. Each squadron- and troop-size unit not part of or attached to a regimental squadron goes directly to the designated class III supply point. Package products, such as grease or graphite, are requisitioned and supplied in the same manner as class II supplies.

An armored cavalry squadron support platoon usually delivers fuel to subordinate units as needed. After delivery, class III vehicles replenish at the supporting class III point and return to the troop or battery trains.

In an air cavalry squadron other than the ACCB, each air cavalry troop and the squadron's headquarters troop use their class III vehicles. The armored cavalry or cavalry troop of an air cavalry squadron receives its class III from the squadron support platoon in the same manner as an armored cavalry troop in an armored cavalry squadron receives its class III.

★ Bulk fuel is usually delivered by COSCOM to the ACCB support area. The ACCB support battalion usually establishes a FARP in the air cavalry squadron trains area to replenish the class III vehicles and aircraft of the air cavalry troops. The air cavalry troops establish FARP's as required to support their operations.

Class IV—Items for Which Allowances Are Not Prescribed (Such As, Construction, Fortification, and Camouflage Materiel). Requests for class IV supplies are submitted through command channels. Class IV is delivered in the same manner as class II. Usually COSCOM delivers supplies as far forward as possible to avoid transshipment.

Class V—Explosives; Ammunition; and Nuclear, Biological, and Chemical (NBC) Materiel. Class V items are issued by supply point distribution, except in the ACCB. The air cavalry squadron of the ACCB requests and receives class V in the same manner as class III. Ammunition vehicles of the squadron support platoons or air cavalry troops and howitzer batteries are used to transport class V from the ammunition supply point (ASP) to the unit. Requests (transportation orders) for class V supplies are prepared by a squadron S4 on request from subordinate units. In a regiment, troop-size units not part of a squadron submit their needs to the RLCP where requests are prepared. Requests are taken by class V trucks to the nearest ASP for approval by the OIC of the ASP or the ammunition officer of the major unit. Normal basis for issue is replenishment of a unit's basic load and the announced ammunition supply rate (ASR).

Class VI—Personal Demand Items (Cameras, Books, Athletic Equipment, etc.). Requests for PX support and items are submitted through S1/G1 channels to the appropriate exchange officer. Class VI items are provided by the appropriate exchange officer either directly to the requesting unit or by a mobile PX.

Class VII—Major End Items (Tanks, Trucks, Helicopters, and Mobile Machine Shops). Daily battle loss reports submitted by units serve as the basis for requesting class VII items. Loss reports are consolidated by the squadron supply section and forwarded in the same way as class III requests, except the ACCB air cavalry squadron forwards requests to the brigade materiel management center (BMMC). In a regiment, troop-size units not organic to a squadron submit daily battle loss reports to the RLCP where requests are prepared and forwarded. Issue of class VII items is the same as for

class II supplies. In some cases, command approval must be obtained. Large end items may be delivered directly to the requesting unit. In emergencies, "float" items may be issued.

Class VIII—Medical Supplies (Including Medical Peculiar Repair Parts).

Troops/companies/batteries obtain medical supplies from their supporting medical aid station. A medical aid station in turn obtains supplies from either the appropriate medical clearing station or medical supply, optical, and maintenance (MEDSOM) unit. Resupply is usually accomplished by ground or aerial ambulances returning to units.

Class IX—Repair Parts (Less Medical and Cryptographic) Required for Maintenance Support of All Equipment.

A troop/company/battery requests repair parts from the squadron maintenance, communications, and/or AVUM platoons. These platoons requisition or direct exchange parts with the supporting DS maintenance unit. In an armored cavalry regiment, the air

cavalry troop, regimental headquarters and headquarters troop, and troop-size units not organic to a squadron forward requests to the RLCP. The RLCP forwards requests to appropriate COSCOM units in the regimental trains. A squadron's maintenance, communications, and aircraft maintenance platoons receive repair parts from the supporting DS maintenance unit or from a supply point. The regimental headquarters and headquarters troop, air cavalry troop, and troop-size units not organic to a squadron receive repair parts from the COSCOM supply point. If unit distribution is used, the parts are delivered by the supporting maintenance unit.

Class X—Supplies to Support Nonmilitary Programs and Items Not Included in Classes I-IX.

Requisitions for items to support nonmilitary programs are forwarded through civil affairs (S5/G5) channels. Requisitions for items not included in other classes of supply are submitted the same way as for class IV supplies. Distribution of both nonmilitary supplies and other supplies, other than classes I-IX, is the same as for class IV supplies.

OTHER COMBAT SERVICE SUPPORT CONSIDERATIONS

MAINTENANCE

Maintenance is a continuing requirement. The state of maintenance reflects a unit's state of discipline, training, and mission readiness. Due to its dispersed operations, a cavalry unit must use onsite

repair whenever possible. This involves the instillation of pride in all crews and the maximum use of contact teams. During tactical operations, vehicles are repaired around the clock.

Categories of Maintenance. In general, maintenance (except aircraft maintenance) is divided into four categories.

- *Organizational maintenance* is performed by the using unit. Repairs, services, and functions are limited to the tools, test equipment, and capabilities of authorized personnel. They are performed according to the appropriate maintenance allocation charts.
- *DS maintenance* is performed by the supporting DS maintenance unit. This category is limited to the repair of end items or unserviceable assemblies on a return-to-user basis. Equipment beyond the repair capability of the DS maintenance unit is evacuated to general support units. The owning unit then requisitions a replacement item.
- *GS maintenance* is performed by the GS maintenance unit supporting the DS maintenance unit. Normally, GS maintenance units repair or overhaul materiel and return it to local area supply operations who place it in ready-to-issue condition.
- *Depot maintenance* facilities repair items beyond the capability of GS maintenance units. The purpose is to retain economically repairable equipment in service.

Repair and Evacuation.

- *Vehicles.* In cavalry, vehicle repair is performed onsite, whenever possible. Recovery and repair are also accomplished at the lowest capable level. If repair is beyond troop/com-

pany/battery capability, it is repaired onsite by the squadron maintenance platoon or DS contact team. If evacuation is required, the vehicle is either towed to the squadron supply route or to a predesignated maintenance collection point. In a regiment, vehicles of troop-size units not organic to a squadron, which can't be repaired by unit personnel, are repaired onsite or evacuated by the supporting DS maintenance unit. In air cavalry squadrons, vehicles beyond the repair capability of the troops are repaired by the supporting DS maintenance contact team onsite, when possible. If evacuation is required, it is performed as discussed on page 8-3.

- *Aircraft.* Aircraft are repaired in the forward area, if possible. If extensive repair is required, they are evacuated to the supporting maintenance facility. Evacuation is the responsibility of the supporting aircraft intermediate maintenance unit. It is accomplished by either air or ground transportation. An air cavalry troop may be authorized to air evacuate LOH's with organic utility helicopters.
- *Signal.* Signal equipment (except cryptographic) beyond the repair capability of a troop/company/battery is evacuated either to the squadron communications platoon or to a maintenance collection point. In a regiment, troop-size units not organic to a squadron evacuate equipment directly to the DS maintenance unit. Repair and evacuation of cryptographic equipment is accomplished through cryptographic channels.

- **Medical.** Medical equipment requiring maintenance is evacuated through medical channels to a medical unit capable of repair.
- **Weapons.** Weapons beyond the repair capability of a troop/company/battery are evacuated to the squadron maintenance platoon for repair or evacuation to the supporting forward support company. Air cavalry squadrons and troop-size units in a regiment not organic to a squadron evacuate items to the supporting DS maintenance facility.
- **Cannibalization.** In combat, a squadron commander is usually given authority to cannibalize damaged equipment which must be evacuated or destroyed. Cannibalization *must not* be used to bypass proper supply procedures or to replenish a unit's basic load of repair parts. Such action distorts the recorded demand and can result in serious shortages.

PERSONNEL SERVICES

Personnel services deal with personnel procurement and management, safety management, personnel replacements, passes, leaves, recreational services, promotions, reductions, awards and decorations, postal services, PX services, religious and morale activities, finance services, legal assistance, welfare assistance, and nonappropriated funds. Most personnel services to cavalry units organic to a division are provided by the adjutant general company and the finance

company of DISCOM. Armored cavalry regiments and separate air cavalry squadrons are normally provided support from COSCOM to perform personnel services. The air cavalry squadron of the ACCB receives personnel support from the headquarters and headquarters company in the brigade support battalion.

MEDICAL SUPPORT

The basic principles of medical treatment and evacuation in cavalry are:

- Rearward medical units evacuate patients from forward medical units.
- Each medical installation sorts and classifies patients for treatment, further evacuation, or return to duty.
- Provide medical support as close to forward elements as time, distance factors, and the tactical situation permit.
- Return maximum number of personnel to duty.
- Evacuate patients no farther to the rear than necessary.

Patients receive emergency medical care from supporting aidmen from the squadron/regimental medical platoon. Patients requiring more treatment are evacuated to the squadron/regimental aid station. The ambulance (tracked or wheeled) from the medical platoon is used for evacuation from a fire swept area. The squadron/regimental aid station performs only essential medical procedures necessary to preserve life, limb, or eyesight, or to stabilize the patient for further evacuation. Patients requiring more treatment are evacuated to the supporting medical unit by evacuation means tailored to the tactical capabilities and organization of the supported unit.

TRANSPORTATION

Additional transport may be required to supplement a cavalry unit for such requirements as:

- Evacuating large numbers of PW's and/or civilians.
- Evacuating large amounts of captured materiel.
- Hauling more than the basic load of class III and IV.
- Moving large amounts of barrier materiel.
- Evacuating large amounts of damaged materiel.

Requests for additional transport by a divisional squadron are made through S4/G4 channels to the division transportation officer. A regiment or separate air cavalry squadron forwards requests for additional transport to the COSCOM movement control center. In the air cavalry squadron of the ACCB, requests for additional transport are forwarded to the brigade materiel management center (BMMC).

BATH AND CLOTHING EXCHANGE SERVICES

Bath and clothing exchange services are normally provided either on an area basis by units of the COSCOM, or by teams in augmentation to a DISCOM. Coordination is accomplished through S4/G4 channels.

QUARTERMASTER GRAVES REGISTRATION

Graves registration involves the collection, identification, evacuation, and security of dead soldiers and their personal effects. Graves registration teams are usually provided to a DISCOM, a regiment, and the ACCB. A separate air cavalry squadron receives a graves registration team from COSCOM. Graves registration is a staff function of S1/G1.

MAPS

A regiment or squadron S2 determines and forwards requirements for maps to the S4 for requisition. In a regiment, each squadron forwards the requests to the regimental S4 for consolidation and forwarding to the corps topographic company. Divisional cavalry squadrons forward requisitions to the supply and transport battalion of DISCOM. In the air cavalry squadron of the ACCB, requests are forwarded to BMMC. Separate air cavalry squadrons forward requests to the corps topographic company. Procedures for issue of maps are the same as for class II supplies.

SUMMARY

Combat service support for cavalry primarily concerns supply, transportation, maintenance, and personnel, medical, and administrative services.

All cavalry units, except platoons, have combat service support elements which provide their immediate needs and interface with the combat service support chain. Combat service support elements usually organize into trains for combat.

Nonorganic combat service support is provided by COSCOM or DISCOM. The ACCB air cavalry squadron receives support from the ACCB support battalion.

The basic principles of cavalry combat service support are command, impetus to the front, maintaining reserves, and planning.

The *supply* system requisitions, distributes, and stores supplies. Resupply is accomplished by the supply point method and/or unit distribution method.

Additional *transportation* to supplement a cavalry unit is available through the COSCOM movement control center.

Maintenance is a continuing requirement for cavalry. During tactical operations, vehicles are repaired around the clock. There are four kinds of maintenance:

- Organizational maintenance is performed by the using unit.
- DS maintenance is performed by the supporting DS maintenance unit.
- GS maintenance is performed by the GS maintenance unit supporting the DS maintenance unit.
- Depot maintenance facilities repair items beyond the capability of GS maintenance units.

Personnel services deal with personnel procurement and management, safety management, personnel replacements, passes, leaves, recreational services, promotions, reductions, awards and decorations, postal services, PX services, religious and morale activities, finance services, legal assistance, welfare assistance, and nonappropriated funds.

Patients receive emergency *medical care* from supporting aidmen from the squadron/regimental medical platoon. Patients requiring more treatment are evacuated to the squadron/regimental aid station.

Administrative services are provided by COSCOM, DISCOM, and ACCB.

OPERATIONS IN ACTIVE NUCLEAR CONDITIONS

The primary purpose of nuclear, biological, and chemical (NBC) weapons is the same as for any other weapon; that is, to produce casualties, destroy or disable equipment, and generally disrupt operations. Chemical and biological agents and nuclear weapons may be used separately or in combination and when used, normally supplement conventional weapons. This chapter describes operations in active nuclear conditions. Operations in active chemical and biological conditions are discussed in appendix I. *No treaty or international agreement exists to prohibit the use of nuclear weapons in warfare. If an enemy has nuclear weapons, cavalry units must be prepared to operate in a nuclear environment at the outbreak of hostilities.* The enemy might use nuclear weapons from the start, or he might attack in a conventional manner and use them later.

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OPERATIONS IN AN ACTIVE NUCLEAR ENVIRONMENT

Cavalry units, because of the dispersion normal to their operations, are usually not good nuclear targets. Exceptions are concentrations of aircraft and regimental or squadron CP's, and a strongpoint of resistance which can't be easily bypassed. Preventive measures center around maintaining as much dispersion as possible, prior training, and frequent relocation of aircraft and regimental and squadron CP's. After nuclear warfare starts, the combat power of cavalry can be considerably increased by using nuclear fires against strongpoints or concentrations of enemy armor moving to contact or contained against an obstacle. *Although nuclear weapons are tremendously destructive, there are defenses against them.* The more each cavalryman understands about what a nuclear weapon can and cannot do, the more effective he will be on the nuclear battlefield, and the greater his chances of survival. The key is training which stresses:

- Discipline.
- Camouflage, cover, and concealment.
- Dispersion.
- Immediate reaction to a nuclear attack warning or a nuclear attack itself.
- Tactics and movement techniques discussed later in this manual.

- Being prepared to conduct area damage control operations.
- Being prepared to conduct radiological monitoring and survey.
- Knowing how to use a nuclear weapon to gain a tactical advantage.
- Knowing how and being prepared to implement decontamination procedures.

Cavalry can expect to fight on the nuclear battlefield essentially in the same manner as on the conventional battlefield. It should be expected that combat service support and communications will be disrupted more than on the conventional battlefield and that cavalry units may be isolated for extended periods. The larger force of which the cavalry unit is a part concentrates forces only when absolutely necessary, to avoid creating a lucrative nuclear target. However, the tactics used by cavalry are the same it uses on the conventional battlefield; that is, full use of cover and concealment, overwatch, and suppression. For these reasons, this chapter describes characteristics of nuclear weapons, their effects on equipment and personnel, and protective measures to be taken by cavalry during operations in active nuclear conditions. First, however, it is necessary to describe what to expect from the enemy during nuclear operations.

THE ENEMY IN NUCLEAR BATTLE

Threat forces with nuclear weapons plan for their use in both offensive and defensive operations as the basis of all fire planning. Nuclear attacks are combined and coordinat-

ed with conventional fires and air attacks, and exploited rapidly by ground forces. Nuclear weapons may also be used with chemical and/or biological agents.

Offense. In the attack, Threat tactics are similar to those used on the conventional battlefield; that is, the enemy attempts to overwhelm the defense with the weight and speed of his attack, both day and night. The attack is on a broad front, with formations moving on independent axes, accepting the risk of open flanks. To minimize this danger, the enemy will neutralize ground dominating his axes of advance by nuclear strikes.

To avoid presenting worthwhile nuclear targets, the enemy disperses his forces and concentrates only for short periods. He may close with the defender not only to destroy him, but also to ensure that the defender can't

use nuclear weapons without endangering his own forces. Primary nuclear targets for attacking Threat forces are command control systems, logistics systems, nuclear delivery means, and large concentrations of troops.

Defense. In the defense, Threat forces fight on the nuclear battlefield the same as they do on the conventional battlefield. The only difference is that defending Threat forces are more widely dispersed on the nuclear battlefield than on the nonnuclear battlefield. Primary nuclear targets for defending Threat forces are the same as when they are attacking.

CHARACTERISTICS OF NUCLEAR WEAPONS —

Blast, thermal radiation (heat and light), and nuclear radiation are hazards from nuclear weapons. Except for nuclear radiation, they are similar to high explosives, but a nuclear detonation is many times more powerful than TNT bombs. Nuclear weapons produce two kinds of nuclear radiation hazards: *initial radiation* which is given off during detonation, and *residual radiation* which remains on or falls back to earth after detonation. Residual radiation comes from fallout from surface or subsurface bursts. The explosion lifts tremendous quantities of earth particles into the nuclear cloud formed at the time of detonation. This highly radioactive material eventually falls back to earth around and downwind from ground zero.

■ *Effects on Personnel.*

- High winds, flying debris, and collapsing shelters or foxholes cause blast injuries.
- Thermal radiation causes burns.
- Nuclear radiation causes sickness or death.

- The bright flash of light causes dazzle (temporary loss or reduction of vision). The flash of light can also cause permanent damage to the eyes of soldiers looking directly at the fireball at the time of detonation.

■ *Effects on Equipment.*

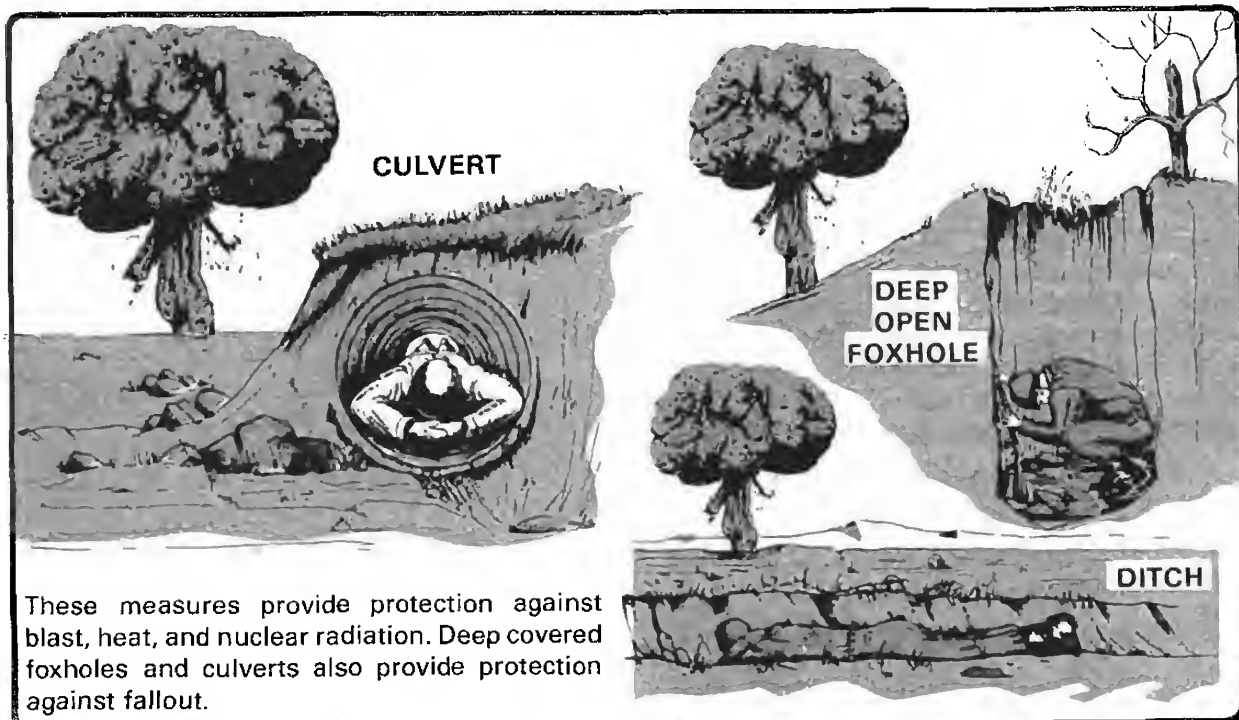
- Blast damage results from the violent dragging and tumbling effect caused by high winds. The blast wave can also crush sealed or partially sealed objects like barrels, fuel tanks, or helicopters.
- Heat ignites dry wood, canvas, and other flammable materials.
- The electromagnetic pulse may damage unprotected C-E equipment.

PROTECTIVE MEASURES

As stated before, a nuclear weapon, although a tremendously destructive device, is not a weapon against which there is no defense. The more each soldier knows about the capabilities of nuclear weapons, the more effective he will be on the nuclear battlefield, and the greater his chances of survival. Training must stress the interrelated importance of discipline, camouflage, cover, concealment, dispersion, and immediate reaction for battlefield survival.

- A tank provides protection roughly equivalent to that of a 4-foot deep foxhole with overhead cover. Tank crews may have to operate on the nuclear battlefield with hatches closed.
- Armored personnel carriers and scout vehicles provide about the same protection as a tank, except to a lesser degree against nuclear radiation.

Hazard from fallout may last for days and cover many square miles. Since nuclear radiation can't be detected by the physical senses, cavalry units have RADIAC instruments to measure radiation. When operating on the nuclear battlefield, radiological monitoring is included in all reconnaissance and intelligence activities according to procedures established by higher levels of command. After residual radiation has been detected by radiological monitoring, cavalry continues its mission, and if possible, relocates to minimize radiation exposure. If it is necessary to remain in the fallout area, armored vehicles button up completely with the crews inside. Shelters have overhead cover. The period of time a unit may remain in a contaminated area depends on the intensity of radiation and protection available. Time spent away from cover must be minimized. Once fallout has stopped, radioactive dust on shelters and vehicles must be brushed away, and decontamination is performed as soon as possible.



These measures provide protection against blast, heat, and nuclear radiation. Deep covered foxholes and culverts also provide protection against fallout.

Operations on a nuclear battlefield require that individual protective measures be performed without detailed direction. Unit standing operating procedures must include actions to take during both friendly and enemy use of nuclear weapons:

■ *Enemy Strike.*

- Carry no unnecessary items.
- Secure equipment and ammunition.
- Take advantage of natural shielding.

■ *Friendly Strike.*

- Orient your vehicle to face ground zero.
- Tie down the antenna.
- Close and lock hatches.
- Traverse turret to rear and lock turret traversing mechanism.
- Disconnect the antenna lead from the face of the radio set.

**PROTECTIVE MEASURES
FOR
MOUNTED PERSONNEL**

For detailed information concerning protective measures for mounted personnel against the nuclear Threat, see FM 21-40, *Chemical, Biological, Radiological and Nuclear Defense*.

For detailed information concerning decontamination procedures for mounted personnel, see TM 3-220, *CBR Decontamination*. A commander and a staff officer at regimental or squadron level should also be familiar with FM 101-31-1, FM 101-31-2, and FM 101-31-3 concerning nuclear weapons employment, doctrine, procedures, and effects.

SUMMARY

Although nuclear weapons are tremendously destructive, there are defenses against them. The key to survival in a nuclear environment is training which stresses discipline, camouflage, cover, concealment, dispersion, and immediate reaction.

Hazards from nuclear weapons are blast, thermal radiation (heat and light), and nuclear radiation. There are two kinds of nuclear radiation hazards: *initial radiation* which is given off during detonation, and *residual radiation* which remains on or falls back to earth after detonation.

Hazard from fallout may last for days and cover many square miles. Since nuclear radiation can't be detected by the physical senses, cavalry units have RADIAC instruments to measure radiation. Once fallout stops, radioactive dust on shelters and vehicles must be brushed away, and decontamination must be performed as soon as possible.

REFERENCES

INTERNATIONAL AGREEMENTS

	NATO STANAG	ABCA SOLOG	CENTO STANAG	SEATO SEASTAG
Land Minefields.	2001	1R		
Marking of Contaminated or Dangerous Land Areas.	2002	124		
Patrol Reports by Army Forces.	2003	6R		
Toxic Alarm System.	2004	26		
Bombing, Shelling & Mortaring Reports.	2008	5R2		
Bridge Classification Markings.	2010	24		
Operation Orders.	2014	17R		
Route Classification.	2015			
Military Symbols.	219			
Operational Situation Reports.	2020	16R		2020
Intelligence Reports.	2022	2R2		2022
Method of Describing Ground Location, Areas, and Boundaries.	2029			
Interrogation of Prisoners of War.	2033	69		
Techniques of Land Minefield Laying and Recording.	2036	18R		
Operational Road Movement Orders, Tables, and Graphs.	2041	51		
Standard Procedures for Establishing Communications.	2043	15R2		
Standard Procedures for Dealing with Prisoners of War.	2044	22R		
Rear Area Security and Rear Area Damage Control.	2079	48R	2079	2079
Battlefield Illumination.	2088	108	2088	

	NATO STANAG	ABCA SOLOG	CENTO STANAG	SEATO SEASTAG
Sign Posting of Radiologically Contaminated Areas.	2094	111		
Reporting Engineer Data in the Field.	2096	107		
Fire Coordination in the Land/ Air Battle.	2099		2099	2099
Principles and Procedures for Establishing Liaison.	2101	104		
Friendly Nuclear Strike Warning to Armed Forces Operating on Land.	2104	130		
Telecommunication Symbols.	2109			2112
Radiological Survey.	2112			2112
Offensive Air Support Operations.	2134			
Definitions and Regulations for Military.	2154			
Aircraft Marshalling.	3117			
General Rules Covering the Transport of Loads by Helicopter.	3468			

RECORDS AND REPORTS

In cavalry, reports are the primary means of providing information upon which plans and decisions are based. Reports must be accurate, timely, and complete. Negative information (THERE IS NO ENEMY AT . . .) is frequently as important as positive information. Standard procedures save time, contribute to completeness, and reduce confusion. Reports serve as the primary record of operational events.

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TYPES OF REPORTS

Cavalry units are primarily concerned with three broad categories of reports:

- Intelligence; counterfire; and nuclear, biological, and chemical warfare (NBC) reports.
- Operation reports.
- Administrative reports.

TRANSMISSION AND SECURITY

Means of transmitting reports and safeguarding information contained therein varies from theater to theater, depending on equipment available and local requirements. Care must be taken to encrypt information useful to the enemy transmitted over unsecure means.

INTELLIGENCE, COUNTERFIRE, AND NBC REPORTS

SPOT REPORT (SPOTREP)

A SPOTREP reports enemy and area information. It is generally used by company troop, battery, platoon, team, and below. Normally, the code words (Alpha, Bravo, *etc.*) are not used except when numerous reports are transmitted between radiotelephone operators.

SPOTREP FOR FORD, FERRY, OR OTHER CROSSING SITE

ALFA: Who is observer or source?*

BRAVO: What?

Length of crossing?

Width (usable)?

Bottom material?

Depth of water level (present, maximum and minimum)?

Speed of current?

Banks of approaches (material, height, and slope)?

Vessels and facilities (capacity, *etc.*)?

CHARLIE: Where and when?*

DELTA: Condition (of bottom, banks, *etc.*)?

Bypass (Add complete report if required.)?

ECHO: What are you doing?

EXAMPLE

(Squadron S2) THIS IS (Troop Commander).

(SPOTREP)

ALFA: (Adjacent unit contact party)

BRAVO: FORD. SIX-FIVE METERS LONG. ONE-TWO METERS WIDE. ROCK BOTTOM. ONE-HALF METER DEEP. CURRENT SLOW. APPROACHES TWO-ZERO PERCENT GRAVEL BOTH SIDES.

CHARLIE: FROM CHECKPOINT TWO-NINER DOWN THREE-HUNDRED. RIGHT ONE-FIVE-ZERO. TIME: TWO-FIVE-ZERO-SIX-ZERO-ZERO.

DELTA: GOOD CONDITION. NO ENEMY.

ECHO: CONTINUING MISSION. OVER.

SPOTREP FOR
BRIDGE, OVERPASS, CULVERT,
OR CAUSEWAY

ALFA: Who is observer or source?*

BRAVO: What?

Overall length?

Width of roadway?

Type and material?

Spans (number and length)?

Class (compute)?

Clearances (overhead and horizontal)?

CHARLIE: Where and when?**

DELTA: Condition?

Bypass (Add complete report if required.)?

ECHO: What are you doing?

EXAMPLE

(Troop Commander) THIS IS (Platoon Leader).

(SPOTREP)

ALFA: (Engineer Reconnaissance Team).

BRAVO: BRIDGE. ONE-EIGHT METERS LONG. SIX METERS WIDE. CONCRETE SLAB. CLASS SEVEN-TWO. THREE-SIX METER SPANS. CLEARANCES UNLIMITED.

CHARLIE: GRID MIKE-ALFA-EIGHT-SIX-SIX-NINER-SIX-FIVE.

TIME: TWO-FIVE-ONE-ZERO-ZERO-ZERO.

DELTA: GOOD CONDITION. NO BYPASS WITHIN FIVE-HUNDRED METERS. NO ENEMY.

ECHO: RETURNING TO YOUR LOCATION WITH MORE INFORMATION. OVER.

*Source: The actual origin of information, such as prisoners of war, local civilians, documents, etc.

**Where: Includes from-to distance information for route or trace of area; enemy locations sent in grid coordinates *in the clear* except behind friendly lines information locating friendly units or activities in code.

**When: State either time (date-time group) of observation or duration (from-to) of activity.

SPOTREP FOR
HIGHWAY, ROAD, TRAIL, OR
CROSSCOUNTRY TRACE

ALFA: Who is observer or source?

BRAVO: What?

Distance?

Width?

Surface material?

Alignment (bad curves or grades)?

Foundation (stable or unstable)?

CHARLIE: Where and when?

DELTA: Condition (of surface, shoulders, and drainage)?

ECHO: What are you doing?

EXAMPLE

(Platoon Leader) THIS IS (Team A).

(SPOTREP)

ALFA: (Team A).

BRAVO: ROAD FIVE METERS WIDE. CONCRETE SURFACE.

CHARLIE: FROM CHECKPOINT ONE-NINER TO CHECKPOINT SIX-ONE.
TIME: TWO-FIVE-ZERO-NINER-FIVE-ZERO.

DELTA: GOOD CONDITION. SUITABLE FOR USE BY FIRST BRIGADE. NO ENEMY CONTACT.

ECHO: APPLYING SUPPRESSIVE FIRES AND MANEUVERING TO ATTACK FROM FLANK.
OVER.

SPOTREP FOR ENEMY INFORMATION

ALFA: Who is observer or source?

BRAVO: What?

How many?

How equipped?

CHARLIE: Where and when?

DELTA: Doing what (If moving, give direction, speed, and altitude.)?

ECHO: What are you doing?

EXAMPLE

(Troop Commander) THIS IS (Platoon Leader).

(SPOTREP)

ALFA: (Platoon Leader).

BRAVO: FIVE AGGRESSORS WITH MACHINEGUN.

CHARLIE: GRID MIKE-BRAVO-NINER-EIGHT-FIVE-FIVE-NINER-ONE.

TIME: TWO-FIVE-ONE-SEVEN-FOUR-TWO.

DELTA: DUG IN. FIRING.

ECHO: APPLYING SUPPRESSIVE FIRES AND MANEUVERING TO ATTACK FROM FLANK.
OVER.

ENEMY SHELLING, BOMBING; OR NUCLEAR, BIOLOGICAL, AND CHEMICAL (NBC) WARFARE ACTIVITY REPORT

A report generally used by company, troop, battery, platoon, team, and below to report enemy shelling, bombing, and NBC warfare activity is known as a SHELREP, BOMREP, and NBC-1, respectively.



STANDARD FORMAT

HEADING: Precedence.
Date/time (local or Zulu time, state which)
Security Classification
From
To
Type of Report

ALFA: Strike serial number if known.

BRAVO: Position of observer (UTM or place).

CHARLIE: Direction measured clockwise from grid or magnetic north (state which) of the attack from observer (degrees or mils state which).

DELTA: Date/time of detonation or date/time attack started (local or Zulu time, state which).

ECHO: Illumination time (seconds) or time attack ended (local or Zulu, state which).

FOXTROT: Location of attack (UTM or place) or area attacked (actual/estimated, state which).

GOLF: Means of delivery, if known.

HOTEL: Type of burst-air, surface, or unknown (state which)—including height, if known (chemical or biological) or type of attack (Chemical or biological).

INDIA: Type and number of munitions or aircraft (state which)

JULIET: Flash-to-bang time (seconds).

KILO: Crater present or absent and diameter (meters), if known.

LIMA: Stabilized cloud-top angle or cloud-bottom angle (state which) or cloud-top height or cloud-bottom height (state which) measured at H + 10 minutes (degrees, mils, meters, or feet, state which).

MIKE: Stabilized cloud-top angle or cloud-bottom angle (state which) or cloud-top height (state which) measured at H + 10 minutes (degrees, mils, meters, or feet, state which).

SIERRA: Date/time of reading or date/time contamination (chemical or biological initially detected (local or Zulu time, state which).

X-RAY: Located area of contamination (UTM).

EXAMPLE:

(Squadron S2) THIS IS (ALFA Troop Commander).

NBC-1 (Nuclear).

BRAVO: LB 196400.

CHARLIE: GRID 060 Degrees.

DELTA: Z01405 AULU.

HOTEL: SURFACE.

JULIET: 60.

LIMA: 280 MILS.

SIERRA: 201500 (LOCAL)

X-RAY: LB 208303
LB 20208308
LB 203302
LB 203308.

Note: The item "Type of Report," and letter item D, H, and either B and C or F must always be reported; other items are optional.

RADIATION DOSE-RATE MEASUREMENT REPORT

Radiological monitoring or survey parties report data as quickly as possible. Radiological monitoring information is normally reported through command channels. Radiological survey data is reported as

directed. DA Form 1971-1-R, "Route Technique or Course Leg Technique (Ground and Aerial Survey)" is used for recording information collected (FM 3-12).

PATROL REPORT

Information collected by cavalry elements is normally submitted by SPOTREP's as events occur. The duration and activity of a patrol by aerorifle elements

may make a debriefing desirable. In such case, a debriefing report format helps ensure all information obtained is reported by the patrol.

PATROL BRIEFING REPORT

(Omit Items Not Applicable.)

(DESIGNATION OF PATROL)

(DATE)

TO:

MAPS:

A. SIZE AND COMPOSITION OF PATROL:

B. TASK:

C. TIME OF DEPARTURE:

D. TIME OF RETURN:

E. ROUTES (OUT AND BACK):

F. TERRAIN:

Description of the terrain—dry, swampy, jungle, thickly wooded, high brush, rocky, deepness of ravines and draws; condition of bridges as to type, size, strength, and their effect on the movement of armor and wheeled vehicles.

G. ENEMY:

Strength, disposition, condition of defenses, equipment, weapons, attitude, morale, exact location, movements, and any shift in dispositions. Time activity was observed and coordinates where activity occurred.

H. ANY MAP CORRECTIONS:

I. MISCELLANEOUS INFORMATION:

Including aspects of nuclear, biological, and chemical warfare.

J. RESULTS OF ENCOUNTERS WITH ENEMY:

Enemy prisoners and dispositions, identification, enemy casualties, and captured documents and equipment.

K. CONDITION OF PATROL, INCLUDING DISPOSITION OF ANY DEAD OR WOUNDED:

L. CONCLUSIONS AND RECOMMENDATIONS:

Including to what extent the mission was accomplished and recommendations as to patrol equipment and tactics.

Signature

Grade/Rank

Organization/Unit of Patrol Leader

M. ADDITIONAL REMARKS BY DEBRIEFER:

Signature

Grade/Rank

Organization/Unit of Debriefer

Time

N. DISTRIBUTION:

ROUTE, BRIDGE, TUNNEL, FORD, OR FERRY REPORT

In cavalry, a detailed report concerning a route, bridge, tunnel, ford, or ferry is generally completed at troop or squadron using information obtained from SPOTREP's and/

or reports prepared by supporting engineers. DA Forms 1248, 1249, and 1250 may be used. For additional information, see FM 5-34 and FM 5-36.

INTELLIGENCE SUMMARY (INTSUM)

An INTSUM is a summary of significant information obtained by a squadron or regiment for a specific period. The S2 prepares and distributes it to higher, lower, and adjacent units (FM 30-5).

FORMAT

(Omit items not applicable.)

1. Issuing unit (always included).
2. Time and date of issue (always included).
3. Summary of enemy activity for period.
 - a. Ground activity.
 - b. Trace of forward elements.
 - c. Potential targets for nuclear weapons.
 - d. Nuclear activity.
 - e. CB activity.
 - f. Air activity.
 - g. Other (new tactics, counterintelligence, etc.).
4. Personnel and equipment losses.
 - a. Personnel (KIA and WIA).
 - b. Prisoners of war.
 - c. Equipment destroyed or captured.
5. New obstacles and barriers.
6. Administrative activities.
7. New identifications.
 - a. Units.
 - b. Personalities.

8. Enemy movements.
9. Estimation of number and types of vehicles.
10. Weather and terrain conditions.
11. Brief discussion of capabilities and vulnerabilities (always included).
12. Conclusions (always included).

EXAMPLE

(Regiment S2) THIS IS (Second Squadron).

ONE: TWO-SLASH-TWO-ZERO-ONE
CAV.

TWO: ZERO-TWO-ONE-SIX-ZERO-ZERO-
ALFA.

THREE ALFA: PLATOON STRENGTH
PROBING ATTACKS AT MIKE-BRAVO-
TWO-ONE-SEVEN-NINER-NINER-TWO.
TIME: ONE-FOUR-FIVE-ZERO AND
AT MIKE-BRAVO-TWO-TWO-ONE-
NINER-NINER-THREE.

TIME: ONE-FIVE-ONE-FIVE.

THREE BRAVO: NO CHANGE.

THREE DELTA: TWO JET-FIGHTER-
BOMBER AIRCRAFT ATTACKED
TANK COMPANY AT MIKE BRAVO-
TWO- ONE-ZERO-NINER-NINER-FIVE.

TIME: ONE-FOUR-FIVE-FIVE WITH
CANNON AND ROCKETS.

FOUR ALFA: ESTIMATE ONE-ZERO
KILLED AND TWO-ZERO WOUNDED.

FOUR CHARLIE: TWO BMP's WITH
SAGGER'S AND ONE T-62 TANK
DESTROYED.

SIX: SUSPECTED SUPPLY POINT AT
MIKE-BRAVO-TWO-SIX-EIGHT-NINER-
NINER-TWO.

EIGHT: ESTIMATED REINFORCED
TANK COMPANY MOVING NORTH ON
ROAD FROM VICINITY MIKE-BRAVO-
TWO-SEVEN-TWO-NINER-NINER-
EIGHT AT ONE-TWO KILOMETERS PER
HOUR, ESTIMATED TIME: ONE-
FIVE-TWO-FIVE.

NINER: NO CHANGE.

ONE-ZERO: NO CHANGE.

ONE-ONE: ENEMY CAPABLE OF AT-
TACKING IN REINFORCED COMPANY
STRENGTH IN SECTOR BEFORE ONE-
NINER-ZERO-ZERO.

ONE-TWO: EXPECT REINFORCED
COMPANY STRENGTH ATTACK IN
SECTOR BEFORE ONE-NINER-ZERO-
ZERO AND INCREASING PRESSURE
THROUGHOUT NIGHT.

OPERATION REPORTS

SITUATION/STATUS REPORT (STATREP)

A STATREP is submitted by company/
troop/battery to report their tactical situation
and status. It is submitted after significant
events and as otherwise specified by a
squadron. A fragmentary report is submitted
when the entire report is not required.

FORMAT

Report as of: (DTG)

ALFA*: Reporting unit (call sign).

BRAVO*: Location(s).

Company/troop report locations of immed-
iate subordinate elements, command post,
airstrip/heliport, trains, and observation
post and radar site locations and primary
sectors.

Platoons report only center of mass or front line trace and observation post locations.
 CHARLIE*: Activity.

Brief summary of activity since last report.
 DELTA: Personnel***

Losses since: (DTG) (in code):

DELTA ONE: Killed in action.

DELTA TWO: Wounded in action.

DELTA THREE: Missing in action.

DELTA FOUR: Captured.

DELTA FIVE: Nonbattle casualties.

DELTA SIX: Administrative losses.

ECHO: Ammunition.

Total ammunition required to replenish basic load (in code).

FOXTROT: Fuel.

Total fuel required in gallons by type (in code).

GOLF: Equipment.

Total vehicles and designated major items short; including all items not immediately available for action** (in code).

HOTEL: Remarks.

Any additional information required to complete the situation/status picture. Omit if not required.

*Indicates items of fragmentary report.

**See unit SOP for detailed method of reporting.

***For initial report upon attachment *only*, send complete PDS.

EXAMPLE

(Company Commander) THIS IS (First Platoon Leader).

(STATREP) TWO-SEVEN-ONE-FOUR-ZERO-ZERO.

ALFA: (First Platoon).

BRAVO: GRID MIKE-BRAVO-SIX-SEVEN-FIVE-TWO-TWO-THREE.

CHARLIE: CONTINUING ATTACK.

HOTEL: TWO-PAPA-WHISKEY LEFT

GUARDED AT CHECKPOINT TWO-TWO.
 OVER.

(Squadron Operations) THIS IS (Charlie Troop Commander).

(STATREP) ONE-FOUR-ZERO-FOUR-ZERO-ZERO.

ALFA: (CHARLIE TROOP).

BRAVO: (FIRST PLATOON) GRID MIKE-ALFA-ONE-EIGHT-TWO-FIVE-SIX-EIGHT TO ONE-EIGHT-SEVEN-FIVE-SIX-SEVEN/(SECOND PLATOON) ONE-EIGHT-SEVEN-FIVE-SIX-SEVEN TO ONE-EIGHT-NINE-FIVE-SIX-TWO/(THIRD PLATOON) ONE-NINE-ZERO-FIVE-FIVE-NINE TO ONE-NINE-TWO-FIVE-FIVE/(COMMAND POST ONE-EIGHT-FOUR-FIVE-SIX-NINE (OBSERVATION POST TWO) TWO-ZERO-EIGHT-FIVE-FIVE-NINE/RADAR ONE-EIGHT-EIGHT-FIVE-SIX-THREE PRIMARY SECTOR AZIMUTH ONE-ONE-EIGHT-ZERO MILS.

CHARLIE: ALL ELEMENTS CLOSED IN POSITION ONE-FOUR-ZERO-FOUR-FOUR-EIGHT RECEIVING SPORADIC ARTILLERY FIRE.

DELTA: ONE-THREE-ONE-EIGHT-ZERO-ZERO.

DELTA TWO: ONE.

DELTA FIVE: ONE.

ECHO: NEGATIVE.

FOXTROT: ONE-TWO-HUNDRED DIESEL FIVE-HUNDRED MOGAS.

GOLF: ONE ONE-QUARTER-TON TRUCK.

HOTEL: IN CONTACT WITH BRAVO TROOP AT CONTACT POINT FIVE-NINE.

(SHELREP) FOLLOWS, WAIT.

OPERATIONAL SITUATION REPORT (SITREP)

A SITREP summarizing the tactical situation for a specific period is submitted to higher headquarters by a squadron or regiment (FM 101-5).

COMMAND REPORT

A command report is prepared and submitted as required by squadron and regiment for historical purposes (FM 101-5).

MINEFIELD REPORT

All cavalry units must report:

- Intention to lay mines.
- Initiation of laying.
- Completion of laying.
- Enemy mine warfare activity.

Minefields, when established by cavalry units, must be reported on DA Form 1355. This is usually done by squadron or regiment. Most often, cavalry units establish hasty protective minefields. A DA Form 1355-1 is prepared and submitted by each platoon. For more information see FM 5-34.

ADMINISTRATIVE REPORTS

Administrative reports are submitted as specified by higher headquarters. Most of the information required comes from company/troop/battery STATREP's (paragraph B-10).

STANDARDIZED INSTALLATION AND DIVISIONAL PERSONNEL REPORT SYSTEM (SIDPERS)

Personnel actions and strength accountability are accomplished according to SIDPERS. Preparation of DA Forms 2475-2, 3728, and 4187 at company/troop/battery level is prescribed in volume I of the *SIDPERS User's Manual*.

CASUALTY REPORT

Casualty reports are prepared by the casualty branch of the supporting personnel service unit normally located at division and regiment. Data concerning circumstances are forwarded to the casualty branch as prescribed.

PERSONNEL DAILY SUMMARY (PDS)

During combat operations, SIDPERS may not provide cavalry units timely personnel data. Regiment and squadron usually make a personnel daily summary (PDS) of their personnel status as of a certain time. It is prepared mostly from information received in STATREP's (FM 101-5).

COMBAT VEHICLE STATUS REPORT

A combat vehicle status report is usually submitted daily by a squadron. It is normally prepared from information in STATREP's (FM 101-5).

PERIODIC LOGISTICS REPORT

A periodic logistics report is submitted by squadron and/or regiment to show their logistics status (FM 101-5).

TACTICAL ROAD MARCH AND ASSEMBLY AREA

A combat unit moving to contact moves along the terrain. This is done using traveling, traveling overwatch, and bounding overwatch as described in chapter 4. At times, a unit moves from one assembly area to another to position itself for future combat operations. These movements are called tactical road marches. A tactical road march differs from a march to contact in that:

- It is conducted at a prescribed speed.
- A prescribed interval is maintained between vehicles.
- The primary consideration is the rapid movement of units.

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ASSEMBLY AREA.....	C-20

PLANNING

Movement planning consists of three steps which may be accomplished jointly and continuously. These steps are: determination of requirements for the move, analysis of organic and nonorganic movement capabilities, and establishment of unit movement priorities. The following factors are considered in movement planning:

- Organization of units and their equipment.
- Assembly of units and transportation means.

- Packing and marking of equipment and loading personnel and equipment.
- Control, coordination, and combat service support for the movement and arrival at the destination.
- Assembly of units and equipment at the destination.
- Security measures before, during, and after the movement.
- Enemy situation, geographic conditions, and weather.

TRAINING

The success or failure of a combat mission could very well depend upon the ability of units to move rapidly over great distances. Training is necessary to test and check unit loading plans, to develop and improve standing operating procedures

(SOP), to prevent wasted time and effort, and to maintain operational efficiency. Cavalry units should integrate tactical road marching and occupation of assembly areas into other types of training whenever possible.

STANDING OPERATING PROCEDURES

SOP's for tactical marches and occupation of assembly areas are usually written in the troop and squadron. A platoon SOP conforms to that of its parent unit and is seldom reduced to writing. Some of the routine items that may be included in the SOP are loading plans; composition of serials and march units; control measures; rates of march under various conditions; formations; communications; security measures; time intervals and distances; location of the command post during the march; schedule, duration, and tasks during halts; organiza-

tion of quartering and reconnaissance parties; and reporting instructions. Like vehicles should have the same stowage plan for equipment and ammunition. This prevents confusion during combat and recovery operations when personnel may have to move from one vehicle to another. Sectors for each vehicular mounted weapon should be prescribed throughout the column. Orders for a particular movement may modify or amplify the SOP to fit the requirements of a particular situation.

TACTICAL ROAD MARCH

This section provides guidance for planning and executing a tactical road march. The techniques and procedures discussed

may be adapted to meet the needs of any situation.

PREPARING FOR A TACTICAL ROAD MARCH

Movement Considerations. The basic considerations in planning any tactical road march are: The mission and tactical situation; what is to be moved (troops and equipment); and the type, number, and characteristics of vehicles available for the move. The success of a tactical road march depends upon the thoroughness with which it is planned.

March Planning Sequence. When preparing for a tactical road march, follow this sequence:

- Prepare and issue the warning order (issued orally at troop level and below).
- Prepare an estimate of the situation.
- Organize and dispatch reconnaissance and quartering parties (should follow SOP).
- Prepare detailed movement plans:
 - Organize the march.
 - Review reconnaissance information.
 - Compute march data.
 - Prepare a movement table.
- Prepare and issue the complete march order (issued orally at troop and below).

Warning Order. The commander issues a warning order for a movement as early as possible in order to give his units maximum time for preparation. The warning order alerts the units and should indicate the general purpose of the operation, the destination, and the approximate departure time. Fragmentary orders should follow the warning order to provide as much information as secrecy limitations permit.

Estimate of the Situation. The purpose of the estimate of the situation is to find the best way to accomplish the move. The estimator considers all circumstances affecting the move and analyzes and compares possible courses of action.

The estimate is as thorough as time and circumstances permit. The estimate should result in a recommendation (staff officer) or decision (commander) on the route (scheme of maneuver) and the organization of the march column.

Route Reconnaissance. A route reconnaissance is conducted to confirm and supplement data obtained from map studies, higher headquarters, and air reconnaissance. Speed of movement is often closely related to accuracy of reconnaissance.

Route reconnaissance is performed to determine the capacities of underpasses and bridges; locate culverts, ferries, and fords; and identify critical points and obstacles. Prior location of critical points can prevent congestion and aid security.

Instructions to the route reconnaissance party usually state the nature and extent of information required and the time and place the report is to be submitted.

Quartering Party. A quartering party should precede the main body whenever possible. A squadron quartering party is normally composed of a quartering officer (S1 or headquarters troop commander), a security element if the tactical situation requires, communications and medical personnel, and the necessary staff section and subordinate representatives. Its purpose is to reconnoiter the new area, make necessary improvements on entrances and routes, and guide march elements into the new area. The commander

of the quartering party must be told the route, order of march, and estimated time of arrival of the main body. A troop quartering party is usually led by the first sergeant and consists of one or two representatives from each platoon and the troop headquarters.

It is desirable that the same soldiers be used regularly on quartering party assignments and be trained in mine detection and removal. The quartering party should have sufficient guides and markers, and necessary pioneer tools to improve the new area. As march elements clear the release point, quartering party members guide them to selected or designated assembly areas.

MARCH COLUMNS

A tactical march may be conducted in close column, open column, or by infiltration. March techniques vary depending on the situation.

Close Column. Vehicles are about 25m apart during daylight. At night, vehicles are spaced so that the driver can see two lights in the blackout marker of the vehicle ahead.

Close column is normally used for marches during darkness, under blackout driving conditions. This method of marching takes maximum advantage of the traffic capacity of the routes, but provides little dispersion.

Normally, vehicle density is about 30 vehicles per kilometer along the route of march.

Open Column. Distance between vehicles is increased to provide greater dispersion and varies from 50-100m, or greater if the situation requires.

Open column is normally used during daylight. It may also be used at night using infrared lights or during moonlit nights on good routes, using blackout lights.

Normally, vehicle density is about 15 vehicles per kilometer when vehicles are 50m apart, 12 vehicles per kilometer when the distance is 75m, and 10 vehicles per kilometer when the distance is increased to 100m.

Infiltration. Vehicles are usually dispatched individually, in small groups, or at irregular intervals at a rate that keeps the traffic density down and prevents the undue massing of vehicles.

Infiltration is the best passive defense against enemy observation and attack. It is suited for tactical marches when sufficient time and road space are available and when maximum security, deception, and dispersion are desired.

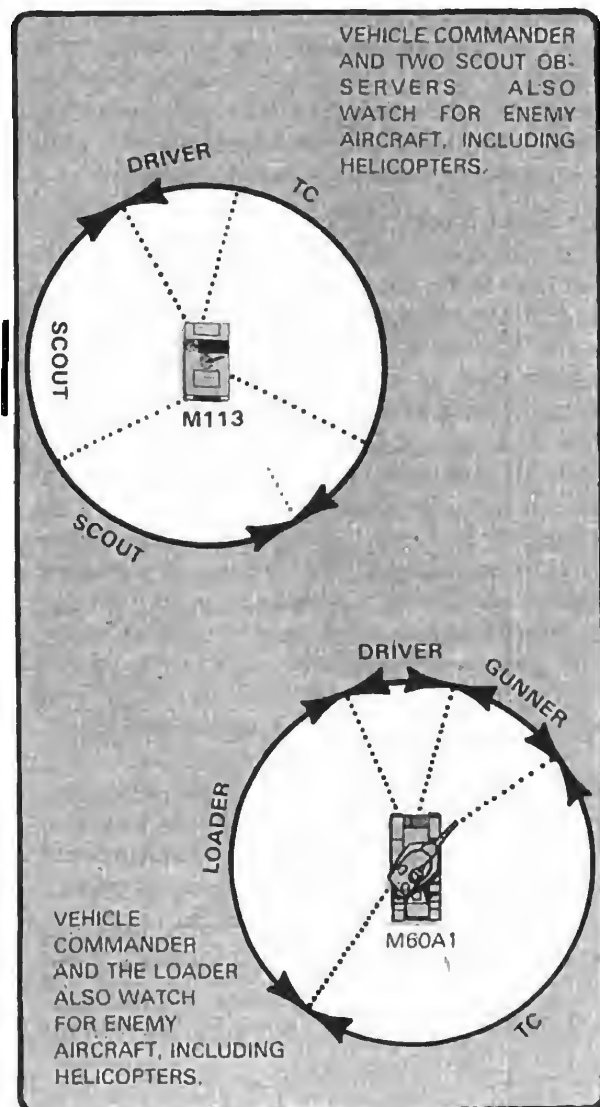
MARCH ORGANIZATION

A march column includes all elements using the same route for a single movement under the control of a single commander. Whenever possible, a battalion task force marches over multiple routes to reduce closing time. A large column may be composed of a number of subdivisions, each under the control of a subordinate commander. March columns, regardless of size, are composed of three elements: a head, a main body, and a trail element.

- The *head* is the first vehicle of the column and normally sets the pace.
- The *main body* is made up of the major elements of column serials and march units.
 - A *serial* is a major subdivision of a march column. A serial is organized as a single unit under one commander for planning, regulation, and control. A battalion task force usually forms into a serial.
 - A *march unit* is a subdivision of a serial and is normally a squad, section, platoon, company, troop, or battery. It moves and halts under the control of a single commander using voice, visual signals, or radio when no other means of communication can be used.
- The *trail party* follows the march column and includes personnel and equipment necessary for emergency vehicle repair and recovery, medical aid and evacuation, and unscheduled refueling.

The commander does not have a prescribed place in the column. He positions himself where he can best control the operation.

Vehicle commanders assign *sectors of observation* to their personnel so that there is 360° observation around their vehicles. Each vehicle commander designates an *air guard* to provide air security. Specific vehicles may be designated as air guard vehicles and their entire crews orient only on air observation.



MARCH COLUMN CONTROL

Column control is maintained through the chain of command. Commanders of serials and march units are responsible for controlling their elements. Each uses his staff or representatives to assist as he may direct. Ground vehicles, aircraft, route marking guides, and military police may help control and coordinate the march.

Each unit marching as part of a larger element maintains liaison with the preceding unit. A liaison officer travels with the preceding unit, keeps his commander informed of that unit's location, and gives him early warning of any unscheduled halt and the reason as soon as it is determined.

Start Point (SP). An SP provides all units of a march column a common point for starting their movement. When units use more than one route, each route has a start point. The SP is a place along the route of march that is easily recognizable on the ground, such as a road intersection. An SP should not be in a defile, on a hill, or at a sharp curve in the road. It should be far enough from assembly areas to allow units to be organized and moving at the prescribed rate when it is reached. No element of a march column should be required to march to the rear or through another unit in order to reach it. Before starting a march, each major unit of a serial reconnoiters its route to the SP and determines the exact time required to reach it. The movement order states the time each serial will arrive at and clear its SP. However, the serial commander determines and announces the times for major units of his serial to arrive at and clear the serial start point.

Release Point (RP). An RP provides all units of the march column a common point for reverting to the control of their parent unit. The RP should be on the route of march

and easily recognizable on the map and on the ground. Guides meet units as they arrive at the RP and lead them to the new areas. Multiple routes and cross country movement from there to assembly areas enable units to disperse rapidly. In selecting an RP, avoid hills, defiles, and sharp curves. No unit should be required to countermarch or pass through another unit to reach its new position.

Critical Points. Critical points on a route are those points used for reference in providing instructions, where interference with movement might occur, or where timing might be a critical factor. The route reconnaissance report or a map study should provide the march planner with information to designate critical points along the route of march and distances from one critical point to another.

Restrictions. Restrictions are points along the route of march, such as bridges, intersections, ferries, or bypasses, where movement may be limited or obstructed during specified periods. The march planner should start the move early enough to pass before the restriction begins, delay the start of the move to pass the restriction after it has ended, or plan to halt the column along the route until the restriction is over.

Communications. Messengers are the primary means of communication during road marches. Visual signals are also used. Because the enemy has good radio direction finding equipment, radio is used only in emergencies and when no other means of communication is available. Road guides can also pass messages from one march unit to a following march unit. Because of the need to stay off the radio, road guides are very important in controlling the speed of march units and the intervals between them.

Traffic Control of the March. Traffic control is normally provided by the headquarters controlling the march. Military police traffic control posts may be located at critical points along the route to provide orientation and minimize delays caused by other columns, civilian or refugee traffic, congested areas, or difficult terrain. Movements on multiple routes during periods of poor visibility, major intersection defiles, and detours along routes increase traffic control problems.

Road guides may augment and support the military police effort. Road guides should be posted in pairs, one to direct traffic while the other provides security. Their equipment should provide for identification during hours of darkness. Guides are normally posted by an advance party of the moving unit.

Control of Column Speed. Elements in a column of any length encounter many different types of routes and obstacles simultaneously, resulting in different parts of the column moving at different speeds at the same time. This can produce an undesirable accordion action or whip effect. The movement order gives march speed which is an *average* rate of march maintained by march elements. The movement order also gives maximum catchup speed for safety and to reduce "column whipping."

To control whipping, the leading vehicle must not exceed the authorized maximum speed of the slowest vehicle in the column, especially after negotiating an obstacle. To minimize vehicle congestion on the near side of an obstacle, vehicle commanders and drivers must be alert and maintain the prescribed minimum distance between vehicles. To further reduce whipping and to

maintain proper march distance, each vehicle must reduce or increase speed gradually.

Vehicles that have dropped out of the column for any reason should return to their positions only when the column has stopped.

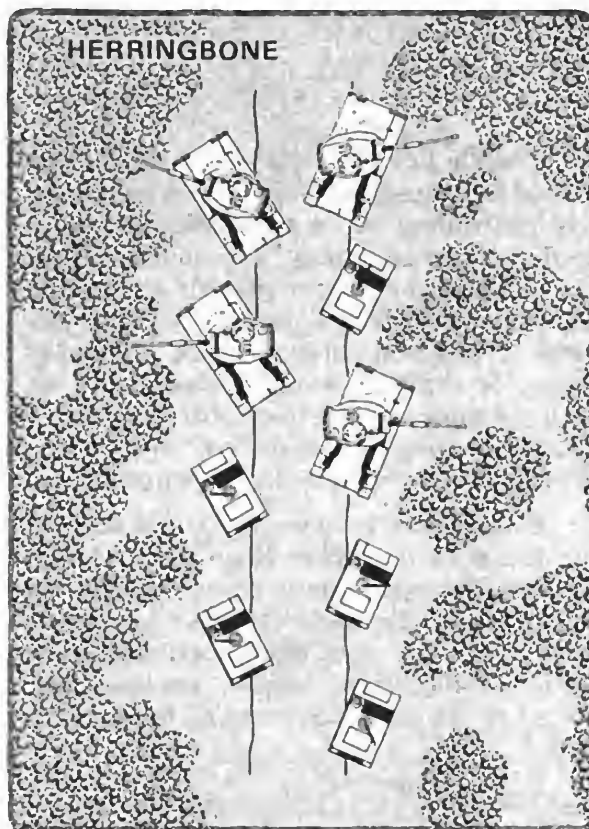
Halts. Halts are made for rest, personal comfort and relief, messing, refueling, maintenance and inspection of equipment, allowing other traffic to pass, and for making adjustments in schedules. The time and duration of halts are usually established in the movement order or prescribed in the unit SOP.

- *Short halts* for rest are usually taken for 15 minutes after the first hour of marching and for 10 minutes every 2 hours thereafter. The prescribed rate of march includes the time required for short halts. When possible, march elements on the same route stop at the same time. Route characteristics may make it necessary for the halt to occur in one particular part of the route rather than simultaneously at a fixed time.
- *Long halts* are planned in advance requiring that additional time be specifically allocated and added to the total travel time. Locations for long halts are normally selected to allow all vehicles to clear the road and permit proper dispersion.

Unit SOP's should prescribe actions to be taken during halts. Vehicular crews perform during-operation maintenance services at scheduled halts. Whenever unscheduled halts occur, a vehicle commander makes contact with the vehicle to his front, and movement commanders take appropriate action to determine and eliminate the cause of the halt.

Halts for refueling should be scheduled in *advance*. This enables march unit commanders to make definite plans for refueling.

It may be desirable to temporarily clear the route of march to shorten the column. When terrain permits, units do this by coiling on each side of the route. A coil is a circle of vehicles with weapons oriented outward. If sufficient area is not available or condition of the terrain prevents coiling, a *herringbone* is formed.



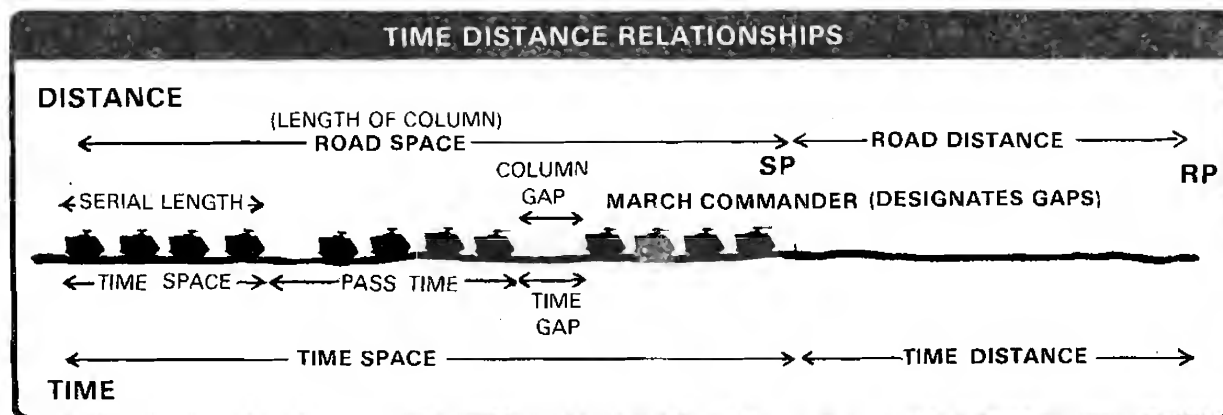
The first priority at a halt is to establish local security. Observation posts are established and sectors of fire are assigned to each platoon, section, and squad.

Disabled vehicle halts must not obstruct traffic. The crew moves disabled vehicles off the road and reports their status immediately. The crew establishes security and posts aides to direct traffic. If the crew repairs the vehicle, it rejoins the *rear* of the column. If the crew can't repair the vehicle, it is recovered by the trail party.

MARCH TERMS, MOVEMENT FORMULAS, AND COMPUTATIONS

An understanding of certain march terms is necessary in order for the planner to develop detailed movement plans. These terms together with basic factors of distance, rate, and time are transformed into move-

ment formulas. Formulas are applied to known data to derive information necessary to prepare a time schedule. The time schedule regulates departures and arrivals of march elements.



Time and Distance Relationship. The relationship between time and distance is the basis for march planning. The planner must determine how far the column is to travel (distance) and how long it will take to make the move (time). He must know the space (length of column) the column will occupy on the route. He must also include in his computations the safety factor of distance (road gap) or (time gap), which must separate march columns and their elements. Each term used for distance has its corresponding term for time. The length of a column in kilometers has an equivalent pass time in minutes. The road distance, how far in kilometers or miles, has a corresponding time distance, how far in time. The relationship between time and distance is shown next.

Distance Factors.

- *Vehicle distance* is the space between two consecutive vehicles of an organized element of a column.
- *Column gap* is the space between two organized elements following each other on the same route. It can be calculated in units of length or in units of time as measured from the rear of one element to the front of the following element.
- *Traffic density* is the average number of vehicles that occupy 1 mile or 1 kilometer of road space, expressed in vehicles per mile (vpm) or vehicles per kilometer (vpk).
- *Length of a column* is the length of a roadway occupied by a column, including gaps in the column, measured inclusively from front to rear.
- *Road gap* is the distance between march elements. It is the length

aspect of a column gap, and since it is more significant when the column is moving, it becomes a factor of time rather than distance.

Rate Factors.

- *Speed* indicates the actual rate of movement of a vehicle at a given moment, as shown on the speedometer in kilometers per hour or miles per hour.
- *Pace* is the regulated speed of a column or element as set by the pace setter in order to maintain the prescribed average speed.
- *Rate of march* is the average number of miles or kilometers traveled in any given period of time, including short periodic halts and other short delays. It is expressed as miles or kilometers in the hour (kmih).

Time Factors.

- *Arrival time* is the time the head of the column arrives at a designated point.
- *Clearance time* is the time the tail of a column passes a designated point.
- *Completion time (CT)* is the time the last vehicle of a column passes the release point.
- *Extra time allowance (EXTAL).*
 - Within a column moving under one identification serial number, an extra time allowance of 1 minute per 25 vehicles is allotted above the calculated pass time.

- In a column where the number of vehicles is over 600, the extra time allowance is 2 minutes per 25 vehicles.
 - A serial of less than 25 vehicles is not allotted any extra time.
 - EXTAL is equitably added to march unit pass times within a serial.
-
- *Pass time (PST)* of a column is the actual time between the moment the first vehicle passes a given point and the moment the last vehicle passes the same point.
 - *Road clearance time* is the total time a column requires to travel over and clear a section of road. Road clearance time equals time distance plus column pass time.
 - *Time distance (TDIS)* is the time required to move from one point to another at a given rate of march. It normally represents the movement of the head vehicle of the column from the start point (SP) to the release point (RP).
 - *Time gap* is the time between rear and front of successive vehicles of elements as they move past any given point. It is the time aspect of column gap and may also be the conversion of road gap to time. There are no prescribed standard gaps. These depend on the size of serials and march units, the time available for the movement, and the tactics required for protection against air and nuclear attack.

Application of Movement Formulas.

Distance, rate, and time are the basic factors for movement computations. If two of these factors are known, the third may be easily found by dividing or multiplying one by the other.

- *Rate* is determined by dividing distance by time.

$$R = \frac{D}{T}$$

- *Distance* is found by multiplying rate by the time.

$$D = R \times T$$

- *Time* is calculated by dividing distance by the rate.

$$T = \frac{D}{R}$$

Determination of Pass Time, Time Distance, Arrival Time, and Completion Time.

- **Pass Time (PST).** Pass time is calculated by taking the total number of vehicles multiplied by 60 and dividing by vehicle density multiplied by speed. To this figure are added extra

time allowance (EXTAL) and time gaps between march elements. This formula may be used to quickly calculate pass time for an entire serial or march column.

$$\text{PST} = \frac{\text{No. of Vehicles} \times 60}{\text{Density} \times \text{Speed}} + \frac{\text{No. of Veh's}}{\text{No. of Veh's in Each Unit}} + (\text{No. of Gaps} \times \text{Minutes in Each Gap})$$

Example. Determine pass time (PST) of a serial of 150 vehicles organized into 6 march units of 25 vehicles each, traveling at a

speed of 24 kmph, with a density of 15 vehicles per kilometer (vpk), and a 2-minute time gap between march units.

$$\text{PST} = \frac{150 \times 60}{15 \times 24} + \frac{150}{25} + (5 \times 2) = \frac{9,000}{360} + 6 + 10 = 25 + 6 + 10 = 41 \text{ minutes}$$

- NOTE: 1. Round off fractions of minutes to next higher whole minute.
2. Extra time allowance (EXTAL) is allocated on the basis of 1

minute per 25 vehicles and added to serial pass time. EXTAL is equitably added to the pass times of each march unit in the serial.

A pass time table together with the extra time allowance table simplifies march planners mathematical processes. To prepare the time schedule for a serial, it is necessary to calculate pass time for each march unit. Using this table, it is a simple process to determine pass time for any march unit regardless of the number of vehicles, travel-

ing speed, or column density. The extra time allowance is then added to the calculated pass time to get the total pass time.

Pass time for a serial is determined by adding march unit pass times together, including gaps between march units. Examples are below the tables.

PASS TIME TABLE (SINGLE MARCH UNIT)

NUMBER OF VEHICLES IN MARCH UNIT	PASS TIME (MINUTES AND SECONDS)											
	16 KMPH/10 MPH				24 KMPH/15 MPH				32 KMPH/20 MPH			
	INTERVAL—METERS				INTERVAL—METERS				INTERVAL—METERS			
	25	50	75	100	25	50	75	100	25	50	75	100
	30 VPK	15 VPK	12 VPK	10 VPK	30 VPK	15 VPK	12 VPK	10 VPK	30 VPK	15 VPK	12 VPK	10 VPK
1	:08	:15	:19	:23	:05	:11	:13	:15	:04	:08	:10	:12
2	:15	:30	:38	:45	:11	:20	:26	:30	:08	:15	:19	:23
3	:23	:45	:57	1:08	:15	:30	:38	:45	:12	:23	:29	:34
4	:30	1:00	1:15	1:30	:20	:41	:50	1:00	:15	:30	:38	:45
5	:38	1:15	1:34	1:53	:26	:50	1:03	1:15	:19	:38	:47	:57
6	:45	1:30	1:53	2:15	:30	1:00	1:15	1:30	:23	:45	:57	1:08
7	:53	1:45	2:12	2:38	:35	1:11	1:28	1:45	:26	:53	1:06	1:19
8	1:00	2:00	2:30	3:00	:41	1:20	1:41	2:00	:30	1:00	1:15	1:30
9	1:08	2:15	2:49	3:23	:45	1:30	1:53	2:15	:34	1:08	1:25	1:42
10	1:15	2:30	3:08	3:45	:50	1:41	2:05	2:30	:38	1:15	1:54	2:15
15	1:53	3:45	4:41	5:38	1:15	2:30	3:08	3:45	:57	1:53	2:21	2:49
20	2:30	5:00	6:15	7:30	1:41	3:20	4:11	5:00	1:15	2:30	3:08	3:45
25	3:08	6:15	7:49	9:23	2:05	4:11	5:13	6:15	1:34	3:08	3:55	4:42
30	3:45	7:30	9:23	11:15	2:30	5:00	6:15	7:30	1:53	3:45	4:42	5:38
40	5:00	10:00	12:30	15:00	3:20	6:41	8:20	10:00	2:30	5:00	6:15	7:30
50	6:15	12:30	15:38	18:45	4:11	8:20	10:26	12:30	3:08	6:15	7:49	9:23

The pass time (PST) table is used in conjunction with the extra time allowance (EXTAL) table to calculate the pass test times for single march units of a battalion task force serial. The pass time table is based upon the number of vehicles in the march unit (density), the interval between the vehicles, and the specified vehicular speed. The figures in this table are expressed in *minutes* and *seconds*. The extra time allowance table provides the EXTAL in minutes based upon the number of vehicles in the march unit (density).

Example 1: Determine the PST for a march unit of 29 vehicles at 50-meter intervals traveling at 40 kmph. Use the 40 kmph/25 mph division of the table and select the 50-meter interval/15 vehicle per kilometer (VPK) column. Find the PST for 25 vehicles (3 minutes). Next, find the PST for 4 vehicles (29 seconds). Add the 3 minutes to the 29 seconds, then round up to the next higher whole minute for a total of 4 minutes. Finally, use the Extra Time Allowance Table and determine the EXTAL for 29 (1 minute). Add 1 minute EXTAL to the 4 minutes PST for the march unit pass time of 5 minutes. To calculate the pass time for a battalion task force *serial*, add the march unit pass times together and include the time gaps between the march units. There will always be one less time gap than march units.

Example 2: Determine the PST for a serial of 4 march units (MU), each march unit with a PST of 5 minutes and a time gap of 2 minutes between march units. Add 5 minutes (MU1) + 2 minutes (time gap) + 5 minutes (MU2) + 2 minutes (time gap) + 5 minutes (MU3) + 2 minutes (time gap) + 5 minutes (MU4) = 26 minutes total serial PST.

PASS TIME TABLE (SINGLE MARCH UNIT)

PASS TIME (MINUTES AND SECONDS)												NUMBER OF VEHICLES IN MARCH UNIT
40 KMPH/25 MPH				48 KMPH/30 MPH				56 KMPH/35 MPH				
INTERVAL—METERS				INTERVAL—METERS				INTERVAL—METERS				
25	50	75	100	25	50	75	100	25	50	75	100	
30 VPK	15 VPK	12 VPK	10 VPK	30 VPK	15 VPK	12 VPK	10 VPK	30 VPK	15 VPK	12 VPK	10 VPK	
:04	:08	:08	:09	:03	:05	:06	:08	:03	:05	:06	:06	1
:08	:15	:15	:18	:05	:11	:13	:15	:05	:09	:11	:13	2
:11	:22	:23	:27	:08	:15	:19	:23	:07	:13	:17	:20	3
:15	:29	:30	:36	:11	:20	:26	:30	:09	:18	:22	:26	4
:18	:36	:38	:45	:13	:26	:32	:38	:11	:22	:27	:33	5
:22	:44	:45	:54	:15	:30	:38	:45	:13	:26	:33	:39	6
:26	:51	:53	1:03	:18	:35	:44	:53	:15	:30	:38	:45	7
:29	:58	1:00	1:12	:20	:41	:50	1:00	:18	:35	:41	:52	8
:33	1:05	1:08	1:21	:23	:45	:57	1:08	:20	:39	:48	:58	9
:36	1:12	1:15	1:30	:26	:50	1:03	1:15	:22	:43	:54	1:05	10
:54	1:48	1:53	2:15	:38	1:15	1:34	1:53	:33	1:05	1:21	1:36	15
1:12	2:24	2:30	3:00	:50	1:41	2:05	2:30	:43	1:26	1:48	2:09	20
1:30	3:00	3:08	3:45	1:03	2:05	2:36	3:08	:54	1:48	2:14	2:41	25
1:48	3:36	3:45	4:30	1:15	2:30	3:08	3:45	1:05	2:09	2:41	3:13	30
2:24	4:48	5:00	6:00	1:41	3:20	4:11	5:00	1:26	2:52	3:35	4:18	40
3:00	6:00	6:15	7:30	2:05	4:11	5:13	6:15	1:48	3:35	4:28	5:22	50

EXTRA TIME ALLOWANCE (EXTAL) TABLE (SINGLE MARCH UNIT)

NUMBER OF VEHICLES IN MARCH UNIT	0—12	13—37	38—62	63—87	88—112	113—137	138—162	163—187	188—212	213—237	238—262
EXTAL IN MINUTES	0	1	2	3	4	5	6	7	8	9	10

- **Time Distance (TDIS).** Rate of march is an average number of miles or kilometers traveled in a given period time (see the Time Distance Table). Time distance is determined by dividing the distance to be traveled by the rate of march.

Time distance *does not* include time for long delays or extended scheduled halts. This formula can be used to quickly calculate time distance:

$$\text{TDIS} = \frac{\text{DISTANCE (KM)}}{\text{RATE OF MARCH (KMIH)}}$$

Example. Determine the time distance of a serial traveling 135km at a speed of 24 kmph (rate of march 20 kmih).

$$\text{TDIS} = \frac{135 \text{ (KM)}}{20 \text{ (KMIH)}} = 6.75 \text{ HOURS}$$

$$\text{TDIS} = 6 \text{ HOURS AND } 45 \text{ MINUTES}$$

NOTE: Fractional parts of an hour are converted to minutes by multiplying the fraction by 60 and rounding off to the next higher whole minute.

A *time distance table* is a valuable tool to the march planner. It provides a listing of factors used to calculate time required to travel certain distances at specified vehicular speeds. Travel rates are expressed in vehicu-

lar speeds and corresponding rates of march. Travel factors are derived from the rate of march, which includes time for short periodic halts and other minor delays that might occur.

TIME DISTANCE TABLE

Speed Miles/Kilometers per Hour	Rate of March Miles/Kilometers in the Hour	Minutes to Travel 1 Kilometer	Minutes to Travel 1 Mile
10 mph 16 kmph	8 mih 12 kmih	5	7.5
15 mph 24 kmph	12 mih 20 kmih	3	5
20 mph 32 kmph	16 mih 25 kmih	2.4	3.75
25 mph 40 kmph	20 mih 32 kmih	1.84	3
30 mph 48 kmph	25 mih 40 kmih	1.5	2.4
35 mph 56 kmph	30 mih 46 kmih	1.3	2
40 mph 65 kmph	33 mih 53 kmih	1.13	1.8

This table gives the time required to travel 1 kilometer or 1 mile at specified march speeds. The travel times are calculated based upon rates of march (miles/kilometers in the hour) and includes time for scheduled short halts and time lost due to road and traffic conditions. The time for long halts must be added to the total travel time. Multiply the total distance to be traveled (miles or kilometers) by the travel time factor for 1 mile or 1 kilometer for the designated speed.

Example. Determine the TDIS for a column traveling 310 kilometers at a speed of 24 kmph.
 $310 \text{ (km)} \times 3 \text{ minutes} = 930 \text{ minutes}$, convert 930 minutes to 15 hours and 30 minutes.

- **Arrival Time (AT).** In march planning, the release point is normally designated as the terminal point of movement. Arrival time at the release point is determined by adding time distance and any long scheduled halts to the start point (SP) time. It may also be calculated by subtracting pass time from completion time.

Example. Determine the arrival time for a serial with a start point (SP) time of 0800 hours, time distance of 6 hours and 45 minutes, and a scheduled halt of 1 hour.

	Hours	Minutes
SP Time	8	0
Time Distance	6	45
Scheduled Halt	<u>1</u>	<u>0</u>
	15	45

Arrival time is 1545 hours.

- **Completion Time (CT).** Completion time is calculated by adding pass time to arrival time. Completion time may also be determined by adding to start point (SP) time, time distance (TDIS), pass time (PST), and any scheduled halts.

Example 1. Determine the completion time for a serial with an arrival time of 1545 hours and a pass time of 41 minutes.

	Hours	Minutes
Arrival Time	15	45
Pass Time	<u>0</u>	<u>41</u>
	15	86

Completion time is 1626 hours.

Example 2. Determine the completion time for a serial with a start point (SP) time of 0800 hours, time distance (TDIS) of 6 hours and 45 minutes, pass time (PST) of 41 minutes, and a scheduled halt of 1 hour.

	Hours	Minutes
SP Time	8	0
Time Distance	6	45
Pass Time	0	41
Scheduled Halt	<u>1</u>	<u>0</u>
	15	86

Completion time is 1626 hours.

SPEED

Speed PW's to the rear to remove them from the battle area.

SAFEGUARD

Prevent escape and harm.

Before evacuating a PW, attach a tag to him.

PW TAG

DATE/TIME _____

PLACE OF CAPTURE (GRID COORDINATES) _____

CAPTURING UNIT _____

CIRCUMSTANCES OF CAPTURE
(HOW IT HAPPENED) _____

NOTE: Tags may be printed before combat or made out of materials at hand on the battlefield.

For evacuation and interrogation, take a PW to the platoon leader and then to an area chosen by the troop/company commander. If trained interrogators are available, the troop commander asks for information about the local tactical situation, then evacuates the

PW to the squadron S2 for more interrogation.

If a PW is wounded, turn him over to medical personnel and evacuate him through medical channels.

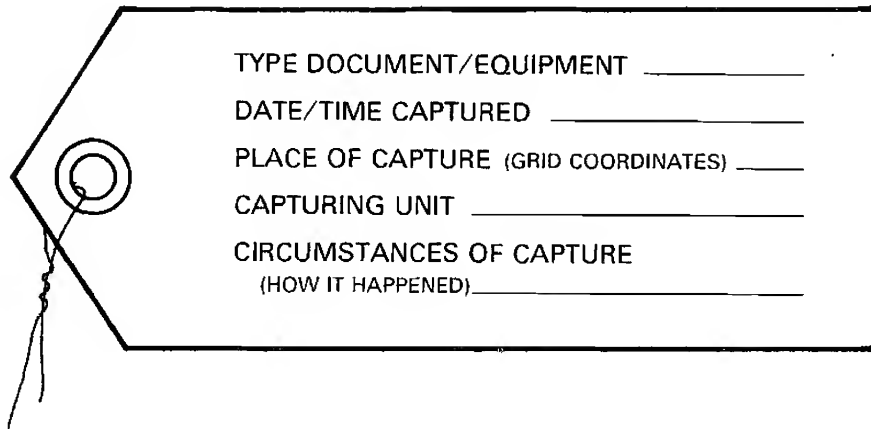
REMEMBER:

- Do *not* mistreat or hurt PW's.
- Follow the five S's in handling PW's.
- Use the proper channel for evacuating PW's, depending on their physical condition.
- Tag PW's before evacuation to the rear.

CAPTURED DOCUMENTS AND EQUIPMENT

Enemy documents and equipment are excellent sources of intelligence information. Documents may be official, such as maps, orders, records, and photographs; or personal, such as letters, diaries, and pay records.

If captured items are not handled properly, the information in them may be lost or delayed until it is useless. Evacuate captured documents and equipment to the next level of command as rapidly as possible. Tag each captured item.



TYPE DOCUMENT/EQUIPMENT _____

DATE/TIME CAPTURED _____

PLACE OF CAPTURE (GRID COORDINATES) _____

CAPTURING UNIT _____

CIRCUMSTANCES OF CAPTURE
(HOW IT HAPPENED) _____

NOTE: Tags may be printed before combat or made out of materials at hand on the battlefield.

Information contained on the tag helps speed up processing of the captured item and indicates its probable value. If the captured item was found on a PW, include the prison-

er's name on the tag and give the item to whomever the PW is given. Evacuate the item with the PW to the next higher headquarters.

OPERATIONS IN ACTIVE CHEMICAL OR BIOLOGICAL CONDITIONS

It is the policy of the United States not to use toxic chemical weapons first; however, they may be used if an enemy employs them against the United States. The United States will not use biological weapons under any circumstances. Threat forces, however, have both chemical and biological weapons so a cavalry unit may have to fight in active chemical and biological conditions. These weapons may be used separately, simultaneously, or with nuclear weapons. Regardless of their use, cavalry fights the same; that is, it makes full use of cover and concealment, overwatch and suppression. This appendix describes some of the characteristics of toxic chemical and biological weapons, their effects on men, equipment, and terrain; and protective measures used by cavalry when operating in active chemical and biological conditions.

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The enemy has great potential for chemical and biological warfare. The enemy's preparedness to use them is clearly illustrated by his training and widespread issue of protective devices as standard equipment. Chemical and biological agents can easily be disseminated over wide areas. Therefore, a cavalry unit must expect to be frequently subjected to them. All personnel, during training, should be required to perform their duties while masked for periods of 2-3 hours. Units should routinely practice decontamination measures as part of normal field training. SOP's setting forth warning signals and what to do must be developed from regiment through platoon. These procedures must be standard throughout a cavalry organization. They must be made known to units operating with or under control of the cavalry unit. For detailed information concerning chemical and biological agent detection and protective measures, see FM 21-40, *Chemical, Biological, Radiological, and Nuclear Defense*. For detailed information concerning decontamination, see TM 3-220, *CBR Decontamination*.

CHEMICAL AGENT DETECTION

Chemical agent detection is conducted to detect the presence of toxic chemical agents. It is done by using a chemical agent detector kit, automatic chemical agent alarm, detection paper, and crayon (FM 21-40). Personnel must be instructed not to rely on odors to detect chemical agents because some highly lethal agents are odorless.

The enemy's emphasis on toxic chemicals requires constant alertness to ensure early warning regardless of a unit's situation. Whenever a chemical agent is detected, SOP warnings are given and all personnel mask

and take other protective measures as required (FM 21-40).

Chemical agent detection is a continuous requirement because of the enemy's great potential for use of toxic agents. It is done as described in FM 21-40 as a matter of routine by all cavalry units.

BIOLOGICAL AGENT DETECTION

Biological agents, during early stages of use, are usually difficult to detect. All soldiers must have an alert and questioning attitude toward any indication that biological agents may have been used. Casualties from a biological attack can be reduced by immunization, quarantine of contaminated structures and areas, rodent control, and using only designated sources of food and drink. The importance of good protective mask discipline and field sanitation must be emphasized (FM 21-40).

CHARACTERISTICS OF CHEMICAL AND BIOLOGICAL AGENTS

Lethal chemical agents are similar to poisonous compounds used in everyday life. Familiar chemical compounds are used to kill flies, mosquitos, and other insects. Chemical agents, however, are far more powerful, and are released to cover relatively large areas. They may be placed on a target as a gas, finely divided liquid or solid particles (aerosols), or liquid droplets. A mixture of agents can cause confusion and increase casualties. They can be disseminated by artillery, mortars, rockets, missiles, aircraft spray, bombs, and landmines. They may be odorless and colorless.

Biological agents are the same disease-producing micro-organisms (germs) naturally present around us every day. The intentional use of micro-organisms creates a disease hazard where none exists naturally. These biological agents may be dispersed as aerosols by generators, explosives, bomblets, missiles, and aircraft. Harmful micro-organisms may also be spread by the release of living insects, such as flies, mosquitos, fleas, and ticks.

Effects on Personnel:

- Chemical and biological agents may enter the body through the eyes, nose, mouth, or skin. They can produce incapacitation or death.
- Liquid agents may be dispersed on equipment, terrain, and foliage. The agent may remain for hours or days presenting a serious hazard to unprotected soldiers.

Effects on Equipment:

- Chemical and biological agents have little direct effect on equipment. Liquid chemical agent contamination on equipment can cause casualties or restrict its use until appropriate decontamination is accomplished.
- Emergency decontamination of vehicles and equipment is accomplished by crew members (FM 3-220, *CBR Decontamination*).

Effects on Terrain:

- Liquid chemical agents may restrict the use of terrain, equipment, and buildings.
- Decontamination of terrain is beyond the capabilities of a cavalry unit. Contaminated areas may either be bypassed, or crossed when indi-

vidual protective equipment is worn.

- Cavalrymen and equipment must be decontaminated after a mission in or involving the crossing of a contaminated area.

PROTECTIVE MEASURES IN CHEMICAL AND BIOLOGICAL WARFARE

A cavalry unit commander must train his men to apply protective measures against toxic chemical and biological attack. Standard operating procedures must provide for an adequate warning system; use of individual and unit protective equipment; procedures for prompt decontamination of individuals, equipment, and supplies; and prompt treatment of casualties.

A cavalryman's primary protection against *toxic chemical and biological* attack is his protective *mask*.

To be protected against *liquid chemical agents*, soldiers must wear *chemical protective clothing as well as masks*. Complete individual protection is provided by wearing the mask with hood, protective overgarments, protective socks with chemical resistant boots, and protective gloves.

Once chemical agents have been used or while the threat of chemical attack exists, the cavalry unit commander determines the level of protection required. This decision, called mission-oriented protective posture (MOPP), is based on the chemical threat, mission, work rate, and temperature. The cavalry unit commander specifies the degree of protection before a mission (FM 21-40). He may subsequently direct that the protection be modified, according to his estimate of the situation.

Information on enemy use of biological agents is disseminated by higher headquarters. A cavalry unit must promptly report unusual occurrences of diseases. The best

local defense against biological warfare is strict enforcement of preventive medical and sanitation measures and high standards of personal hygiene.

AREA DAMAGE CONTROL AND RADIOLOGICAL MONITORING AND SURVEY

Area damage control operations are measures taken after an enemy nuclear, chemical, or biological attack; unusually heavy bombing or shelling; or a natural disaster in order to minimize these effects. Forward of a brigade rear boundary, area damage control measures are designed to minimize interference with combat operations and loss of combat power. Area damage control measures behind a brigade rear boundary are usually oriented toward minimizing damage to combat service support and/or suffering of civilians. A cavalry unit—regiment through troop—may conduct or participate in area damage control while primarily involved in a tactical mission or with area damage control as the primary mission for a short period. In cavalry, a platoon participates in area damage control as part of its parent unit. A cavalry unit is most frequently involved in area damage control while conducting an area security operation. Detailed discussion of area damage control operations is contained in FM 31-85, *Rear Area Protection Operation*; FM 71-100, *Division Operations (Mechanized/Armor)*; and FM 54-2, *The Division Support Command and Separate Brigade Support Battalion*.

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AREA DAMAGE CONTROL

A cavalry unit performing area damage control operations must:

- Determine and report the condition of the unit or population center attacked.
- Assume control of survivors.
- Establish communications between an attacked unit and its next higher operational headquarters.
- Assemble combat capable elements and help them re-establish communications with their next higher operational headquarters.
- Evacuate casualties to casualty collection points or to appropriate medical installations. Casualty collecting points should be easily accessible to ground vehicles and helicopters.
- Evacuate vehicles and major items of equipment to maintenance/decontamination points.
- Perform limited decontamination, and conduct radiological monitoring and chemical agent detection (appendix I). A cavalry unit observing or having knowledge of mass destruction or mass casualties reports and continues its assigned mission. The unit should also anticipate a possible change in mission to counter the attack's effect on the plan of their higher headquarters. This reduces reaction time if a change of mission is required. For detailed information concerning chemical, biological, radiological, and nuclear defense, see FM 21-40, *Chemical, Biological,*

Radiological, and Nuclear Defense.

For detailed information concerning decontamination, see FM 21-40, FM 3-12 (radiological decontamination), and TM 3-220 (chemical and biological agent decontamination).

Staff Responsibilities. The S4 has staff responsibility for area damage control planning. When the plan is implemented, staff responsibility for control passes to the S3. The S2 exercises staff supervision over the collection, processing, reporting, and dissemination of radiological monitoring information and meteorological data. The S1 has staff responsibility for maintaining records and reports reflecting the strength of the command as a result of radiation exposure.






Training. All cavalry units, regiment through troop level, should have SOP's in the event mass destruction and/or mass casualties are caused by enemy action or a natural disaster. These SOP's should be based on plans of the next higher echelon and periodically rehearsed. All cavalry units must be thoroughly trained in protective measures to reduce the effects of mass destruction and/or mass casualties. These measures are discussed in FM 21-40, *Chemical, Biological, Radiological, and Nuclear Defense.*

Organization for Area Damage Control Operations. A cavalry unit committed to area damage control as a primary mission is usually used as organized. In this case, usual command and control procedures apply. Combat service support elements, assisted by combat soldiers, are committed as necessary. When cavalry conducts area damage control operations as part of another mission, it usually commits control and assessment teams (CAT) and rescue squads.

The primary purpose of a CAT is to provide centralized control to ensure prompt and decisive action when an entire TOE unit can't be used. A regiment and/or squadron headquarters provides a CAT. A regimental CAT is committed when area damage control operations require more than one squadron CAT. At times, medical mass evacuation and

heavy labor teams may be provided a squadron. These may be formed out of medical and engineer assets organic to the regiment, or in the case of a divisional squadron, from divisional assets. In either case, such teams are under the OPCON of the regimental or squadron CAT controlling the operation.

TYPICAL ARMORED OR AIR CAVALRY REGIMENT OR SQUADRON CONTROL AND ASSESSMENT TEAM (CAT)

				
1 REGT (SQDN) XO 1 DRIVER	1 REGT (SQDN) C-E OFFICER 1 RADIO MECHANIC/ DRIVER DRIVER*	1 RADIOLOGICAL MONITORING AND SURVEY OFFICER 1 DRIVER**	1 LOGISTICS OFFICER 1 SUPPLY SGT 1 CLERK/DRIVER	1 MEDICAL SERVICE OFFICER 1 SENIOR AIDMAN 1 MEDICAL AIDMAN/ DRIVER***

*Command post carrier may be used, if available.

**Personnel and vehicle are as designated in unit SOP.

***In armored cavalry squadrons a medical aid station carrier may be used.

CONTROL AND ASSESSMENT TEAM:

- MOVES TO AREA OF DAMAGE ON ORDER.
- ESTABLISHES A CONTROL AND ASSESSMENT TEAM CP.
- DETERMINES AND REPORTS THE CONDITION OF THE UNIT OR POPULATION CENTER DAMAGED.
- ASSUMES CONTROL OF SURVIVORS.
- RESTORES COMMAND AND COMMUNICATIONS TO AFFECTED UNITS.
- RELEASES COMBAT EFFECTIVE UNITS TO TACTICAL COMMANDER.
- REQUESTS ADDITIONAL COMBAT SERVICE SUPPORT AS REQUIRED.
- DIRECTS AND CONTROLS THE OPERATION OF RESCUE SQUADS.

Rescue squads are formed in units from squadron through troop. A regimental headquarters does not normally form a rescue squad. Rescue squads are subordinate to CAT's.

TYPICAL ARMORED OR AIR CAVALRY SQUADRON RESCUE SQUAD



1 OFFICER
1 DRIVER



1 NCO SENIOR
RECOVERY
MECHANIC
2 RECOVERY
MECHANICS
1 TRACKED
VEHICLE
MECHANIC



1 AID STATION
ATTENDANT
1 AMBULANCE
DRIVER
1 AMBULANCE
ATTENDANT*



1 OPERATOR
1 ASSISTANT



2 DRIVERS
2 ASSISTANT
DRIVERS

*Squad may use a medic command tracked vehicle if casualties are high.

SQUADRON RESCUE SQUAD:

- OPERATES CASUALTY AND EQUIPMENT COLLECTION POINTS.
- PROVIDES LIMITED EMERGENCY MEDICAL TREATMENT.
- CONDUCTS RADIOLOGICAL MONITORING.
- HELPS COMPANY RESCUE SQUADS.

Each combat troop-size unit also establishes a rescue squad which is assembled on order and attached to a CAT.

TYPICAL ARMORED CAVALRY TROOP RESCUE SQUAD



1 OIC/NCOIC*
1 DRIVER
1 MEDICAL AIDMAN**



1 SCOUT SQUAD



1 SENIOR RECOVERY MECHANIC
1 RECOVERY MECH/DRIVER

*The vehicle is from troop headquarters and personnel are designated by unit SOP.

**An ambulance may also be included.

NOTE: A cavalry troop rescue squad follows the same organization as an armored cavalry troop except wheeled vehicles and a 5-ton wrecker are used. A tank company rescue squad is discussed in FM 71-1. A howitzer battery rescue squad is discussed in FM 6-20.

ARMORED CAVALRY TROOP RESCUE SQUAD:

- ADMINISTERS FIRST AID.
- RESCUES AND REMOVES CASUALTIES.
- EVACUATES VEHICLES AND MAJOR ITEMS OF EQUIPMENT.
- CONDUCTS RADIOLOGICAL MONITORING AND CHEMICAL AGENT DETECTION.
- PERFORMS LIMITED HASTY DECONTAMINATION.

TYPICAL AIR CAVALRY TROOP RESCUE SQUAD



1 OIC/PILOT
1 AERIAL OBSERVER*



1 PILOT
1 AERIAL OBSERVER*



2 PILOTS
1 MEDICAL AIDMAN
1 CREW CHIEF**

*The aircraft is from the aeroscout platoon. Personnel are designated by unit SOP.

**The aircraft and personnel are from either the troop headquarters reconnaissance platoon or the service platoon as designated by unit SOP.

AIR CAVALRY TROOP RESCUE SQUAD:

- ADMINISTERS FIRST AID.
- RESCUES AND REMOVES CASUALTIES.
- CONDUCTS RADIOLOGICAL MONITORING.

AREA DAMAGE CONTROL OPERATION

In case of nuclear attack, the headquarters committing a CAT must determine the probable ground zero (GZ) and the 2-RAD/hr contour line. This information will have to be calculated largely from reports of observing units and initial reports from survey teams. From reports and the assumed posture of the involved unit at the time of the burst, the CBR officer estimates GZ, type of burst (low-air, high-air, or surface burst), the destruction power of the weapon (for example, 20 KT), and the residual and/or induced fallout pattern. Based on this information, the

controlling CAT can designate the area of search and sectors of search, and designate locations of the CAT, CP, maintenance/decontamination point, and casualty collection point.

With exception of the GZ and the 2-RAD/hr contour line, the same control measures are used in all area damage control operations conducted by cavalry units. Sectors of search and location of elements are adjusted as necessary once actual conditions are determined.

Control and Location of Area Damage Control Elements. The assembly point is used to assemble the rescue squads and issue necessary instructions to start operations. It should be centrally located in respect to units providing rescue squads, and outside the contaminated or heavily damaged area.

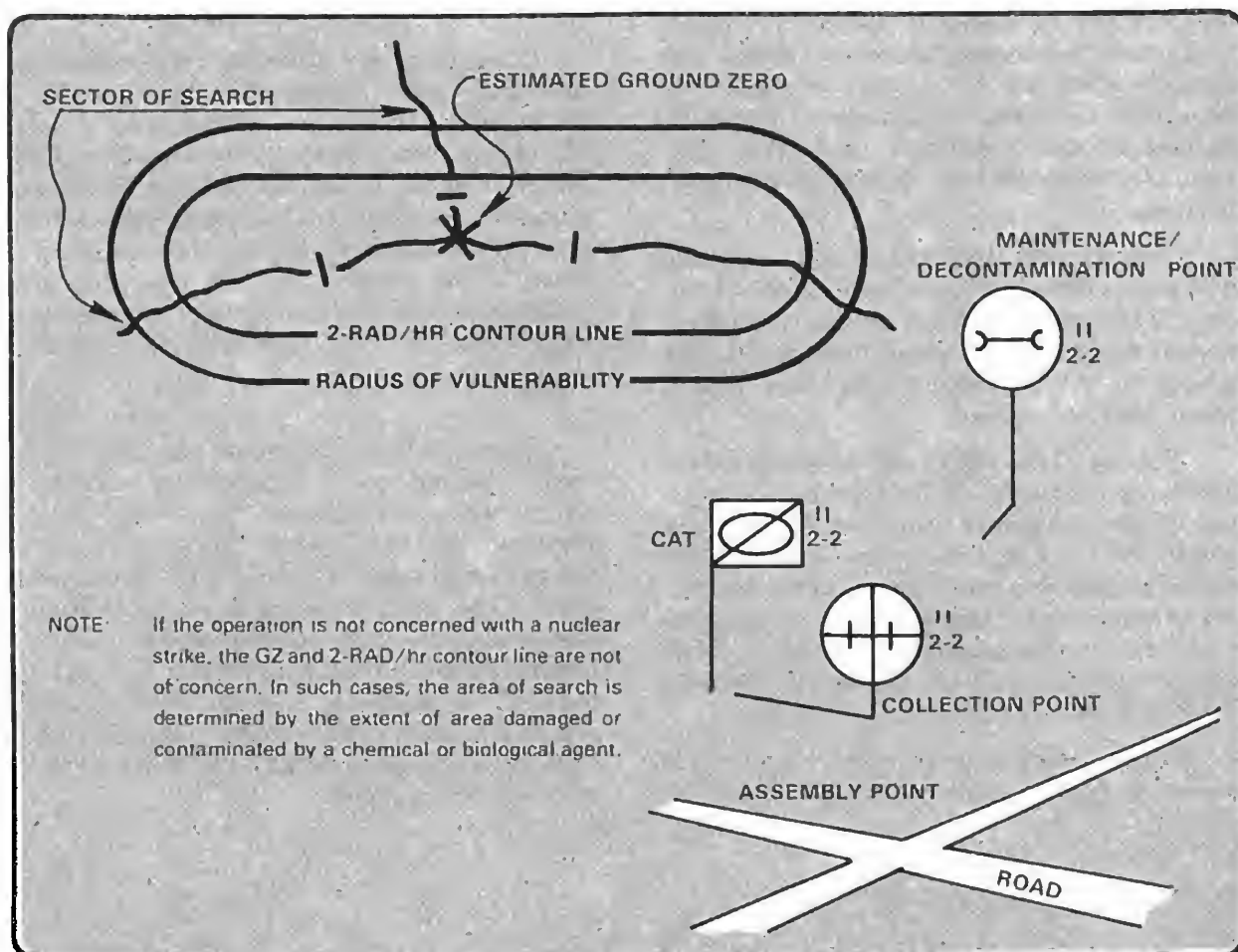
The area of search is based on the assumed posture of soldiers in the damaged area. If the damage was caused by nuclear weapons, the CAT considers whether the troops were protected and estimates the size of the nuclear weapons.

If damage was caused by nuclear weapons, GZ and the 2-RAD/hr contour line must quickly be estimated and refined as additional information is reported by radiological

survey parties. Because of the significance of any movement within the 2-RAD/hr contour line, the maximum allowable stay time for troops involved must be estimated and disseminated. All activity within the 2-RAD/hr contour line must be controlled by the CAT.

Sectors of search are subdivisions of the area of search. Sector boundaries should be easily distinguished terrain features.

Location of the CAT CP, maintenance/decontamination point(s), and casualty collection point(s) are designated by the CAT commander. The maintenance/decontamination point(s) should not be contiguous to casualty collection point(s). A casualty collection point should be easily accessible to both ground and air vehicles.



CONDUCT OF AN AREA DAMAGE CONTROL OPERATION

A method of conducting a squadron-level area damage control operation using a CAT and rescue teams after an enemy nuclear attack is described below. Radiological monitoring and survey are accomplished as discussed in FM 21-40 and later in this appendix.

The 2d Armored Cavalry Squadron, after participating in a covering force operation, is assigned an area security mission due to considerable guerilla activity. TF 2-32 Armor, a part of a brigade reserve, has been subjected to an enemy nuclear strike.

Initial reports from units observing the attack indicate the weapon was a 20-KT, low-air burst. Because of the tactical situation forward, the squadron is ordered to implement an area damage control operation. The squadron survey team also attempts to determine the extent of damage, location of survivors, and condition of terrain (for example, trees blown down), roads, and bridges.

Concurrently, the squadron commander and staff estimate the weapons effect on the overall situation and what contingency plans should most likely be implemented. In this situation, the squadron CAT and rescue squads are committed.

The use of the CAT must not be based on radio communications. A message is sent to subordinate elements informing them of the use of the CAT and the rescue squads. The message includes the location of the assembly point and specifies radio frequency. This may be a specific frequency set aside by SOP designated in the CEOI, or the frequency of TF 2-32 may be used.

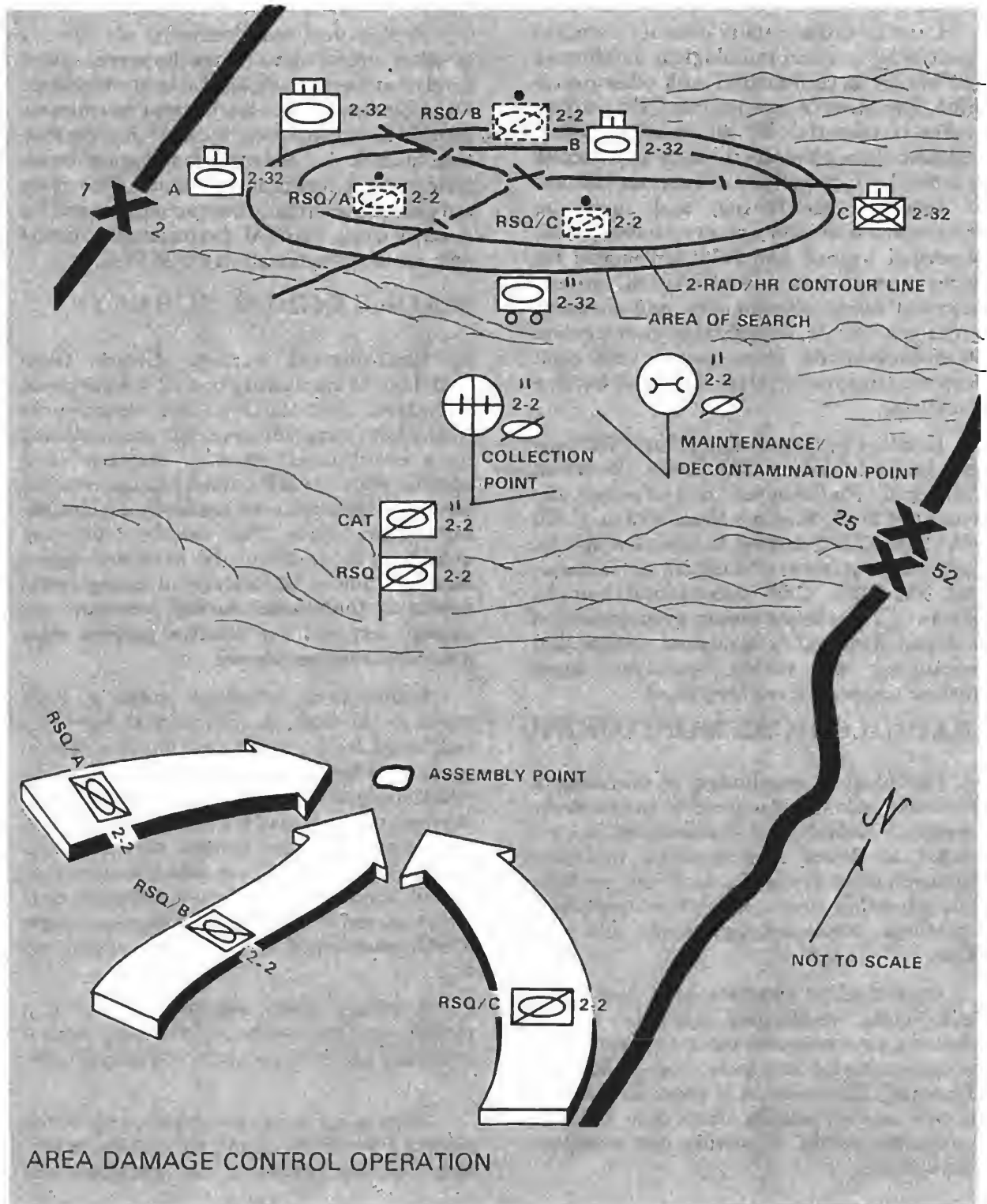
Participating elements rendezvous at the assembly point and are informed by the CAT

commander (squadron executive officer) of the location of the CAT command post, collection points, area of search, 2-RAD/hr contour line, and sectors of search.

During the operation, the CAT commander coordinates the activity of the rescue squads and reports to and requests additional assistance from the squadron's CP. Each rescue squad reports its entry and departure of the 2-RAD/hr area. The CAT must closely monitor such reports to ensure that rescue teams do not become overexposed. Combat capable elements of TF 2-32 are grouped at a rallying point established by the CAT commander. The senior line officer present among TF 2-32 re-establishes radio communications with the brigade.

Casualties are taken to the casualty collection point designated by the CAT commander. They are sorted and given emergency treatment as determined by the senior medical personnel present. Patients requiring evacuation are evacuated to the appropriate medical facility by Army aircraft. These aircraft may be from the air cavalry troop aerorifle platoon or, preferably, supporting aircraft dedicated to medical evacuation.

Shortly after the squadron CAT and rescue teams start operations, maintenance/decontamination personnel and engineer support arrive. These elements report to and are controlled by the squadron CAT. The maintenance/decontamination elements are usually located at the maintenance/decontamination point established by the CAT commander. The engineers remove rubble and blown down trees as necessary to open lines of communication and permit the recovery of casualties.



RADIOLOGICAL MONITORING AND SURVEY

Cavalry units usually conduct chemical agent detection and radiological monitoring and survey in conjunction with other operations. The enemy's potential for CBR warfare makes it essential for all cavalry units—regiment through platoon—to be well trained in individual protective measures and the use of detection, monitoring, and surveying devices. Each cavalry unit must have specific personnel trained and held responsible for using organic dosimeters, RADIAC meters, chemical agent detector kits, and chemical agent alarms. It is desirable that several other individuals know how to use each device in the event primary personnel become casualties.

Detailed guidance concerning CBR warfare is contained in FM 21-40, *Chemical, Biological, Radiological, and Nuclear Defense*; FM 21-41, *Soldier's Handbook for CBR*; FM 21-48, *CBR Training Exercises*; FM 3-12, *Operational Aspects of Radiological Defense*; and TM 3-220, *CBR Decontamination*. In general, CBR warfare requires routine action to detect chemical or biological agents, and monitoring and survey operations when nuclear weapons have been used.

RADIOLOGICAL MONITORING

Radiological monitoring is primarily a protective measure designed to ensure early warning. Radiological monitoring is conducted to detect and measure radiation contamination of specific locations, such as unit assembly areas or platoon positions, structures, personnel, equipment, and supplies.

Once nuclear weapons have been used, radiological monitoring must be accomplished on a continuous basis until such time as contaminated and safe areas have been identified. Thereafter, it is done periodically in safe areas, usually once each hour at designated points. A moving unit monitors continuously.

Radiological monitoring by air cavalry or other aircraft determines the presence and level of airborne radiological contamination. Data obtained can also be used to estimate ground contamination by applying correlation factors. An airborne radiological monitoring team determines ground dose rates only when specifically instructed to do so. It is done by using RADIAC instruments to detect and measure radioactivity (FM 21-40).

RADIOLOGICAL SURVEY

Radiological survey differs from radiological monitoring in that it determines radiation distribution and dose rates throughout a specific area. It is accomplished by a coordinated effort in response to a specific plan. Usually, the situation requires considerable emphasis on rapidly accumulating required data. This can be done most quickly by using air cavalry or other aviation assets. Another advantage of using aerial means is that aerial survey personnel are usually exposed for shorter periods than ground survey personnel.

Radiological surveyors must be dedicated to the task. A radiological survey is conducted by a team consisting of a control party and two or more survey parties. The exact size and composition of a survey team depends on the size of the area to be surveyed, command SOP, and trained soldiers available. It is important to ensure the surveyors do not acquire a cumulative radiation dose which exceeds the operational exposure guide (OEG) established by the theater commander.

A survey party usually consists of a monitor and an assistant. In cavalry units it is usually an air or ground scout vehicle crew.

In cavalry units, a control party is the agency coordinating and controlling activities of survey parties. It also correlates and

reports required data to the headquarters assigning the mission. Radiological survey operations conducted by cavalry may require more than one control party. In this case, coordination, control, and reporting follow usual command lines. For instance, a control party for a platoon's survey party is the platoon headquarters. The controlling agency for a platoon control party is its parent unit. At regimental and squadron level, a

radiological survey and control party is usually organized around staff officers having primary responsibility for nuclear warfare activities.

For a detailed discussion of radiological surveying see FM 21-40, *Chemical, Biological, Radiological, and Nuclear Defense* and FM 3-12, *Operational Aspects of Radiological Defense*.

TRAINING THE CAVALRY UNIT

When not involved in combat operations, the most important thing a cavalry unit does is train for combat operations. The principal publications setting forth training objectives for cavalry are ARTEP 17-55, *Armored Cavalry Squadron*; ARTEP 17-205, *Air Cavalry Squadron*; FM 21-6, *How to Prepare and Conduct Military Training*. The purpose of this appendix is to describe some techniques which can be used by the cavalry unit to gain the maximum possible benefits from the time and resources available.

Training to Defeat the Threat. Cavalry conducts opposing-force field training exercises. Troops maneuver two platoons against a third platoon. Squadrons maneuver two troops against a third, the two troops using Threat doctrine. *This trains units in Threat tactics and trains units to fight forces using Threat tactics.* From time to time the squadron/regimental commander should request that his parent unit coordinate opposing-force support for maneuver against the entire squadron/regiment.

Training During Periods of Limited Visibility. Threat forces are equipped with sophisticated night vision devices, as is the United States Army. Therefore, Threat forces can generally be expected to attack even during periods of darkness, fog, and snow. Cavalry must routinely train during periods of limited visibility—to defend and attack—to operate during periods of limited visibility just as during periods of unrestricted visibility. As a general rule, half the unit training should take place in darkness or bad weather.

Training for Continuous Operations. Soldiers must be trained to fight even when fatigued. The cavalry should conduct continuous field training for periods of 3, 4, and 5 days whenever possible. When this is not possible, fatigue can be added to training by conducting 24-hour exercises, starting with a move from garrison to the field training area shortly after 2400 hours.

Conducting Live-Fire Exercises. Cavalry conducts live-fire exercises as often as time and availability of training areas permit. Moving under cover of overhead indirect fire, adjusting indirect fire within a few hundred meters of protected bunkers or buttoned-up armored vehicles and firing machineguns over the heads of soldiers in trenches accustoms them to the battlefield environment and gives them confidence in supporting weapons and an understanding of the lethality of modern weapons.

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Learning to Survive in the Nuclear and Chemical Battlefield. Units learn to survive by training buttoned-up and in protective masks.

TRAINING THE STAFF AND LEADERS

There is often a tendency in any unit to concentrate on training subordinate units and neglect training the staff and individual leaders. For example, it is not necessary to wait until troops have progressed to a level of training and are ready to participate in squadron exercises before conducting training for leaders and the staff.

Staff and leadership training should parallel unit training so that when subordinate units are ready, the staff and leaders are ready.

Command post exercise in field or garrison can be conducted for the staff and all leaders down to platoon level.

Free play wargames can be arranged and conducted between units.

Tactical exercise without troops (TEWTS) can be used to train leaders. TEWTS are especially useful for training in such subjects as terrain appreciation and analysis, and map reading and tactics. Trainers should present situations and ask subordinate leaders, "How would you do it?" TEWTS can be conducted when the bulk of the troops are not available for training due to fatigue details or other commitments.

TRAINING WITH LIMITED TIME

Concurrent training during scheduled or

unscheduled breaks is a good way to cover new subjects areas and review previous training which can't be adequately covered during scheduled training. Lesson plans can be consolidated on 3×5-inch cards and carried by leaders at all times. When a break occurs, leaders can conduct classes as appropriate or as directed by their commanders. Some subjects appropriate for concurrent training are:

- Threat doctrine and vehicle identification.
- Radio telephone procedures.
- Battlefield first aid.
- Weapons maintenance and training.
- Crew drill for crew-served weapons.
- Map reading and terrain appreciation.
- Unit tactical SOP's.
- Fire commands.
- Air defense with small arms.
- Vehicle maintenance.
- FO procedures and indirect fire adjustment.
- Hand and arm signals.
- Platoon and troop SOP's.

Some subjects already covered during formal sessions can be integrated into follow-on training on a continuing basis. For instance:

- Land navigation. (EXAMPLE. SERGEANT JONES, WE ARE LOCATED AT GRID COORDINATES 123456. WHAT ARE THE COORDINATES OF THAT HILL OVER THERE?)

- Defense against NBC attack.
- Light and noise discipline.
- Road marches and assembly areas.
- Troop-leading procedures.
- Target acquisition.
- Terrain evaluation.
- Threat doctrine. (EXAMPLE. LT SMITH, WE HAVE JUST RECEIVED 6-8 ROUNDS OF 122-MM HOWITZER FIRE NEAR YOUR LOCATION AND YOUR OP HAS REPORTED SIGHTING TWO BRDM'S AND A PT-76. WHAT DOES THIS MEAN TO YOU?)
- Radiotelephone procedures.
- Communications without radio; that is, visual signals, pyrotechniques, and messengers.

TRAINING WITH LIMITED RESOURCES

Fuel shortages may limit the number of vehicles that can be moved to field training sites. When this is the case, good training can still be conducted.

- Depending on available fuel, some platoons can conduct field training while others train in garrison.
- Simple crew drill can be conducted in the motor pool.
- Simple terrain models and sand tables can be used in garrison.
- TEWTS can be conducted from terrain overlooking areas being used by other units or in areas which will not accomodate an entire troop.

- Command post exercises and simple war games can be conducted in garrison.
- Crew performance tests (tankers stakes and mechando courses) and leader reaction courses can be established in garrison locations.

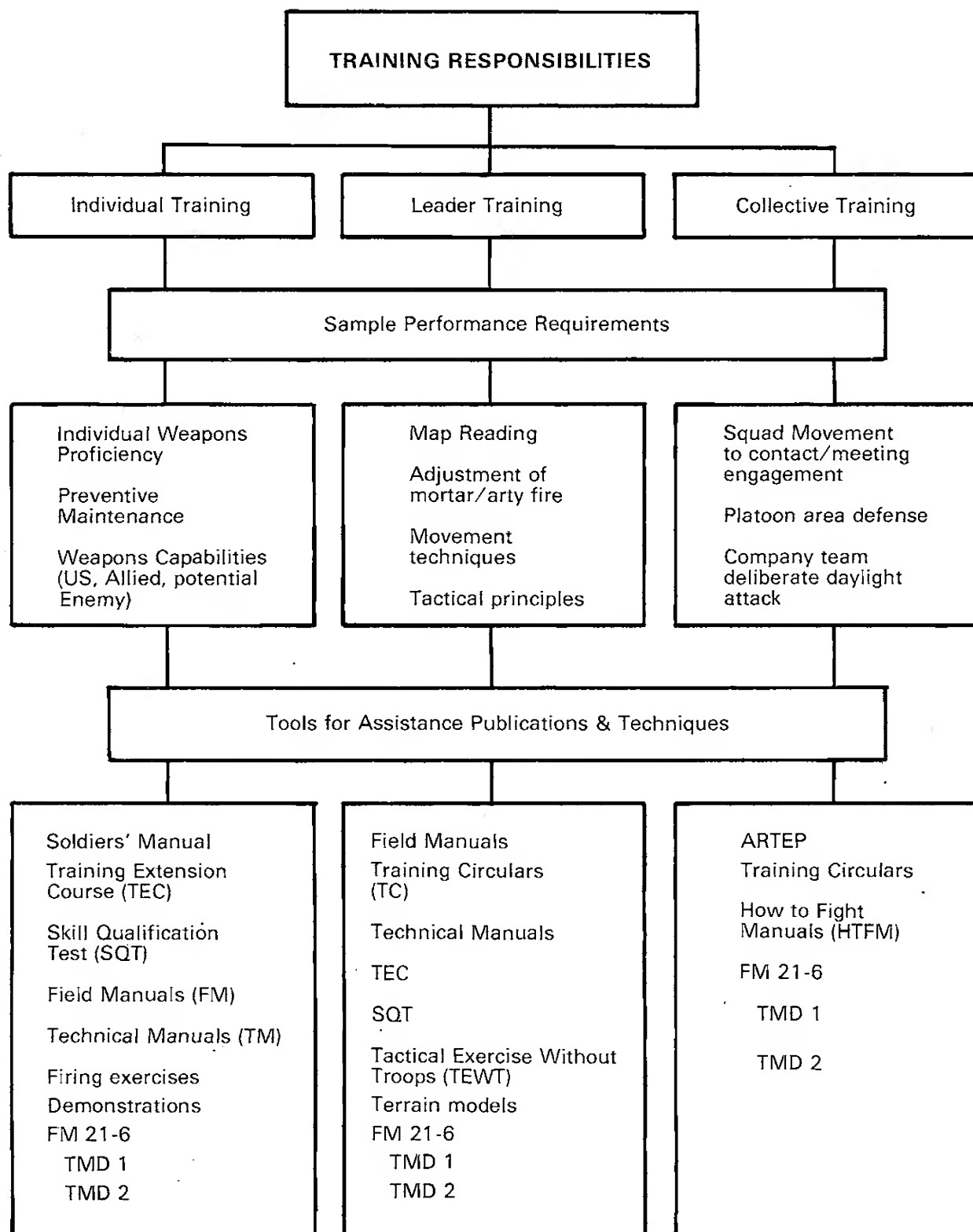
GOOD TRAINING RESULTS FROM GOOD LEADERSHIP

Soldiers are strongly influenced by the example and conduct of their leaders. Leaders must live with their soldiers, share their dangers and privations as well as their accomplishments. Close personal contact reveals the desires; needs; and mental, moral, and physical conditions of soldiers. Good leaders avoid subjecting troops to useless hardships and unnecessary harrassment.

Interest in training can be stimulated by discussions initiated by leaders with their subordinates during breaks in training. During informal discussions, misunderstandings often come to light, new ideas for better training may be suggested, and understanding between seniors and subordinates increases.

Men must be challenged to meet high standards set by leaders. Care should be exercised to ensure that standards are attainable. Competition promoted between crews and/or platoons motivates soldiers to strive for excellence, which is then properly recognized.

A poorly trained unit is likely to fail in a critical moment, probably in its first engagement. A well-trained unit is reflected in the outward appearance of its soldiers, the condition of its equipment, and its readiness for combat. Most of all, a well-trained unit is a reflection of the officers and noncommissioned officers who lead it.



LEADERSHIP

Leadership in cavalry is the art of influencing and directing men in such a way as to obtain their obedience, confidence, respect, and loyal cooperation in preparing for and executing combat operations and other missions. Leadership is based on knowledge of men. The primary duty of a leader is mission accomplishment. Everything else, including the welfare of his men, is subordinate to the mission. A cavalry unit must have high morale and esprit de corps. The basic foundation for morale and esprit de corps in cavalry is professionally competent, physically fit, brave leaders. No man should be a leader of cavalymen unless he places **honor, duty, country, and unit** before his welfare, comfort, and safety.

INGREDIENTS OF LEADERSHIP

Man, the Fundamental Instrument. Man is the fundamental instrument in war; other instruments change, but he remains relatively constant. Unless his behavior and elemental attributes are understood, gross mistakes are probable during planning and troop leading. In training the individual cavalryman, essential considerations are to integrate individuals into a group and to establish for that group high standards of discipline and professionalism without destroying individual initiative.

Physical Endurance and Moral Stamina. War is a severe test of the physical endurance and moral stamina of the individual cavalryman. To be efficient, a cavalryman must be well equipped, technically trained, physically qualified to endure the hardships of field service, and fortified by discipline based on high ideals. Strong men, inculcated with a proper sense of duty, a conscious pride in their unit, and a feeling of mutual obligation to their comrades in the group, can dominate the demoralizing influences of battle far better than men imbued only with fear of punishment or disgrace.

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Individual Worth of the Cavalryman. In spite of advances in technology, the worth of the individual cavalryman is still decisive. The dispersed nature of cavalry operations accentuates his importance. Each cavalryman must train to exploit a situation with energy and boldness and possess the idea that success depends upon his initiative and action.

Cohesion Within the Unit. Dispersion of cavalrymen caused by modern weapons and the nature of cavalry operations makes control difficult. Cohesion within a unit requires good leadership, discipline, pride in unit accomplishments and reputation, and mutual confidence and comradeship among its members.

Requirements of a Leader in Combat. Leaders of cavalrymen in combat, regardless of the echelon, must be cool and thoughtful with a strong feeling of the great responsibility imposed upon them. They must be resolute and self-reliant in their decisions, energetic and insistent in execution, and unperturbed by the fluctuations of combat.

A Good Cavalry Leader Knows and Cares for His Men. A good cavalry leader avoids subjecting his troops to useless hardships. He guards against dissipating their combat strength in inconsequential actions or harassing them through faulty staff management. He keeps in close touch with all subordinate units by means of personal visits and observation. He must personally know the mental, morale, and physical state of his troops; the conditions confronting them; and their accomplishments, desires, and needs. A cavalry leader should promptly extend recognition for services well done, lend help where help is needed, and give encouragement in adversity. A cavalry leader must be consider-

ate to the men he commands. He must also be faithful and loyal to his commander. A cavalry leader must live with his troops and share their dangers, privations, joys, and sorrows. By personal observation and experience, he will then be able to judge their needs and combat value. A cavalry leader who unnecessarily taxes the endurance of his troops will only penalize himself. The proper expenditure of combat strength is in proportion to the objective to be attained. When necessary for mission accomplishment, the cavalry leader requires and receives the complete measure of sacrifice.

Cooperation and Comradeship. A spirit of unselfish cooperation must be fostered among cavalry officers, noncommissioned officers, and men. The strong and capable must encourage and lead the weak and less experienced. If a feeling of true comradeship is firmly established on such a foundation, the combat value of a unit will increase accordingly.

Combat Value of a Unit. The combat value of a unit is determined in great measure by the soldierly qualities of its leaders and members and its will to fight. Outward marks of this combat value are found in the appearance of the men; the condition, care, and maintenance of the weapons and equipment; and the readiness of the unit for action. Superior combat value always offsets numerical inferiority. Superior leadership combined with a unit's superior combat value constitutes a reliable basis for success in battle. A poorly trained unit will usually fail in a critical moment due to demoralizing impressions caused by unexpected events in combat. This is particularly true in the first engagements of a unit. Therefore, training and discipline are of great importance. Discipline and pride derived from good training and leadership are the main cohesive forces in cavalry units.

Compatibility. A wise and capable cavalry unit leader makes sure that the men assigned to component groups of his unit are compatible, and that the composition of the groups is changed as little as possible. He will provide each group a leader in whom its members have confidence. He will see that demonstrated efficiency is promptly recognized and rewarded. He will set a personal example of military conduct, and apply the same rules of discipline to all.

Good Morale and Unity. Good morale and a sense of unit in cavalry can't be improvised; they must be planned and systematically promoted. They are born of just and fair treatment; a constant concern for the cavalryman's welfare; thorough training in basic duties; comradeship among men; and pride in self, organization, and country. Establishment and maintenance of good morale are the marks of good leadership.

Decisive Action. The first demand of war is decisive action. Cavalry unit leaders inspire confidence in their subordinates by decisiveness and the ability to gain material advantage over an initially numerically superior enemy. A reputation for failure in a leader destroys morale. The morale of a cavalry unit is that of its leader. A cavalry leader must remember that physical unfitness undermines his efficiency. Since a physically weak body keeps him from bringing a normal mind to the solution of his problems, he owes it to his men to preserve his own fitness.

MENTALITY OF A CAVALRY LEADER

Leaders of cavalrymen at all echelons

must have mental mobility and responsiveness to command.

Mental Mobility. Mental mobility is the ability of a leader to project his thinking beyond the area of the immediate battle. Cavalry leaders must think in kilometers, remain aware of the tactical situation in adjacent areas, and know enemy tactics as well as the enemy knows them. Mental mobility includes:

- Boldness of concept and execution.
- Foresight and swift decisions.

In modern armor warfare, there is a definite requirement to take the calculated risk. Planning must be flexible to permit immediate adjustments when things do not go as originally planned. Cavalry leaders must be able to quickly adjust to frequent and drastic changes without undue excitement, worry, or frustration. A cavalry unit leader must visualize the probable outcome of a situation and be prepared to react accordingly as the situation develops. He must exceed the pace of the enemy and maintain at least a 5:1 loss ratio in his favor. Mental mobility must be combined with personal mobility. The cavalry unit leader must be proficient in operating from moving combat vehicles and Army aircraft. The essentials of command are carried in his head and his pocket.

Responsiveness to Command. A cavalry leader must be capable of accepting a mission-type order, clearly understanding its meaning, and immediately taking necessary action to execute the order. Efficient responsiveness in cavalry requires a highly developed degree of professional competence.

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